



# National Transportation Safety Board

Washington, D.C. 20594

## Safety Recommendation

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**Date:** August 3, 2001

**In reply refer to:** A-01-29

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

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On February 16, 2000, about 0708 Pacific standard time,<sup>1</sup> American Airlines flight 9503 (AAL9503), a McDonnell Douglas<sup>2</sup> MD-83, departed the paved surface of runway 13R and rolled through rough gravel at the runway's edge while landing at Palm Springs International Airport (PSP), Palm Springs, California. AAL9503 was conducted under 14 *Code of Federal Regulations* Part 121 as a nonscheduled positioning flight from Los Angeles, California, to Palm Springs. No passengers were on board the airplane, which sustained minor damage, and neither of the two crewmembers was injured. The incident occurred during day visual meteorological conditions in light rain and shifting winds.<sup>3</sup>

About 0700, the PSP approach controller cleared AAL9503 to approach the airport from the southeast, which lined the airplane up with runway 31. At 0701, the pilot of AAL9503 made initial contact with the PSP Tower local controller and reported that he was 4 miles southeast of the field. The controller reported wind conditions, stating, "currently one five zero [degrees] at one four [knots]," and advised that runway 13R was available. The pilot of AAL9503 accepted the runway assignment and maneuvered the airplane toward runway 13R, which required that he fly around the airport to approach from the northwest. Meanwhile, the local controller received a report from the pilot of a Piper Lance departing runway 13L, who reported wind conditions of "plus or minus ten knots frequently, plus up and down drafts on departure."

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<sup>1</sup> Unless otherwise indicated, all times are Pacific standard time, based on a 24-hour clock.

<sup>2</sup> McDonnell Douglas is now known as Boeing, Douglas Products Division.

<sup>3</sup> According to PSP air traffic controllers and management, rapidly shifting winds are common at the airport, which is surrounded on three sides by mountains. PSP personnel reported that, because of the effects of nearby high terrain, flight crews often experience sudden changes from tailwinds to headwinds or sudden crosswinds while approaching PSP's runway environment.

About 0706, when AAL9503 was 4 1/2 miles northwest of the airport, the controller advised that the wind was 160° at 12 knots. Two minutes later, as AAL9503 was about to land, the controller advised AAL9503 that the wind was 210° at 8 knots but did not advise the flight crew of the report made by the Piper Lance pilot. Witnesses reported that AAL9503 began to “swerve” about 2,000 feet after touchdown and eventually departed the left side of the paved runway surface beyond taxiway B. The airplane then returned to the paved runway surface and stopped near the end of the runway.

After AAL9503 taxied clear of the runway, the pilot of Skywest flight 954, a Canadair Regional Jet that was waiting to depart, asked the tower, “do you have winds at different locations on the runway?” The controller responded “I only have midfield winds.” The pilot of the Piper Lance then transmitted to the tower “I didn’t hear you pass on to Skywest [954]...” and repeated his earlier report of airspeed variances and up and down drafts. The controller transmitted that the winds were “all over the place.”

About 0709, 1 minute after AAL9503’s runway excursion, PSP’s Automated Surface Observation System (ASOS) issued a special<sup>4</sup> weather observation because of shifting winds. The report indicated wind 100° at 7 knots gusting to 19 knots, with winds variable from 070° to 130°, visibility 10 miles in light rain, and altimeter 29.98 inches Hg. The remarks section indicated that a wind shift occurred at 0648 and that barometric pressure was rising rapidly.

Although the National Transportation Safety Board’s investigation of this incident is ongoing, findings thus far have revealed a safety issue concerning the wind-sensing capability and pilots’ perceptions of this capability at PSP. Two of PSP’s four wind anemometers<sup>5</sup> are part of a digital “Centerfield Wind Indicator” (CFW) system that the Federal Aviation Administration (FAA) began installing at the airport in 1993 as part of a supplemental wind monitoring program for certain airports that commonly experience unstable winds. The CFW sensors are located at the approach ends of runways 31L and 13R, and a readout screen for each is installed in the tower with placards marked “Centerfield Wind 31” and “Centerfield Wind 13.”

The PSP Tower Daily Operations Log for the day of the incident indicated that the CFW system was out of service. According to PSP personnel, the CFW system has never been operational, and the FAA Air Traffic Division has not provided facility management or controllers any briefing, policy statement, or training on the system. Acquisition and installation records for the CFW system also indicate that it has never been operational and that no maintenance or certification efforts have taken place since August 1996.

During the course of its investigation, the Safety Board became aware that incomplete CFW installations are also in place at Grand Canyon, Arizona, and Maui Kahului, Hawaii. These

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<sup>4</sup> ASOS automatically generates a special weather observation when conditions change sufficiently to warrant a new observation before the next scheduled report.

<sup>5</sup> Anemometers are sensors that report wind speed and direction; controllers use these data to issue real-time advisories to flight crews. Of the remaining two sensors at PSP, one reports the instantaneous wind and is not recorded, and the other reports the 2-minute wind (the average recorded wind over the preceding 2 minutes) and is used in making the official ASOS reports.

installations were begun at the same time as the PSP installation and, according to FAA management at these facilities, have never been operational. If these systems were fully installed and operational, they would provide a readout of wind speed and direction at different points on the airfield but would not provide controllers with gust front windshear information as a Low Level Windshear Alert System (LLWAS) would.<sup>6</sup>

Although airports designated to receive a CFW installation commonly experience unstable winds, they are not equipped with an LLWAS because thunderstorm activity and related convective windshear hazards, which the system is designed to detect, are infrequent in their respective regions. The Safety Board is concerned, however, that the visible components of the CFW system and controllers' use of the terminology "centerfield wind,"<sup>7</sup> may lead users of these airports to believe that they are LLWAS-equipped or at least able to provide a similar level of information. For example, American Airlines representatives aiding the investigation of the incident at PSP indicated that they believed PSP was equipped with LLWAS or an LLWAS-like system. The question from the pilot of Skywest flight 954 regarding "winds at different locations on the runway" also suggests a belief that PSP is able to provide a greater degree of wind information than it is in fact able to.

The Safety Board notes that the FAA's publication of information regarding LLWAS installations has made pilots generally familiar with the appearance and capabilities of LLWAS. The Board recommended such publication in Safety Recommendation A-83-14, which it issued following its investigation of the July 9, 1982, windshear-related accident involving Pan American World Airways flight 759. Safety Recommendation A-83-14 asked the FAA to:

Make appropriate distribution to the aviation community of information regarding (1) the location and designation of remote sensors of the Low Level Wind Shear Alert System (LLWAS) at equipped airports, (2) the capabilities and limitations of the LLWAS, and (3) the availability of current LLWAS remote sensor information if requested from tower controllers.

In response, the FAA published a Letter to Airmen, dated and effective November 24, 1983, that explained LLWAS; the FAA also established procedures to reissue a Letter to Airmen at 24-month intervals. In addition, the FAA's Airport/Facility Directory identifies facilities that are equipped with LLWAS. Because of the FAA's action, Safety Recommendation A-83-14 was classified "Closed—Acceptable Action" on April 2, 1985.

The Safety Board is concerned that a system intended to provide enhanced wind monitoring at certain U.S. airports is inoperable more than 7 years after its installation was begun. The Board is also concerned that even if the CFW installations were complete and operational, the system's physical likeness to an LLWAS installation and the terminology

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<sup>6</sup> Paragraph 4-3-7 in the AIM states that "at airports equipped with LLWAS, controllers are provided with gust front wind shear information. Controllers will provide this information to pilots by giving the pilot the centerfield wind followed by the boundary wind."

<sup>7</sup> The Safety Board is aware that the FAA plans to revise LLWAS terminology in the AIM but notes that the terminology and capabilities of the CFW system will remain unaddressed.

associated with it may lead airport users to expect a greater level of wind information than is available.

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

Complete and certify any incomplete Centerfield Wind Indicator (CFW) installations at U.S. airports, develop the appropriate controller terminology to preclude confusion between the capabilities of this system and a Low Level Windshear Alert System installation, and include a description of the capabilities and limitations of the CFW system in the Airport/Facility Directory. (A-01-29)

Acting Chairman CARMODY and Members HAMMERSCHMIDT, GOGLIA, and BLACK concurred in this recommendation.

By: Carol J. Carmody  
Acting Chairman