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**NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.**

**OPERATIONAL FACTORS GROUP CHAIRMAN'S FACTUAL REPORT
ATTACHMENT 26: AA WINDSHEAR GUIDANCE**

**American Airlines flight 1420
Little Rock, Arkansas
June 1, 1999**

DCA99MA060

Attachment 26

to Operational Factors Group Chairman's Factual Report

DCA99MA060

AA Windshear Guidance

Windshear

Avoidance

General

Avoid areas of known severe windshear. PIREPS of windshear in excess of 20 knots or 500 fpm climb or descent below 1000 feet AFL are a good indication of such areas. Consider the time elapsed since the report and the change in reported or observed (radar or visual) weather. Microbursts in particular can create severe windshear conditions, but these conditions develop, change, and dissipate rapidly.

The most dangerous form of windshear is a convective microburst. Some have been documented with wind changes in excess of 200 knots. Because microbursts intensify for several minutes after they first impact the ground, the severity may be up to twice that which is initially reported.

Search for clues which may indicate the presence of severe windshear. Severe windshear has been encountered under the following conditions:

- Thunderstorm and convective clouds
- Rain and snow showers
- Frontal systems
- Low altitude jet streams
- Strong or gusty surface winds

Takeoff

When positive indications of severe windshear exist, delay takeoff until conditions improve. When conditions are such that moderate windshear may be encountered, even though not reported, the following precautions are recommended:

- Use maximum thrust instead of standard thrust for takeoff.
- Use the longest suitable runway.
- Do not use any pitch mode of the flight director for takeoff.
- Maximize available margins between V_R and stick shaker through runway selection, flap selection, and delayed rotation. The delayed rotation speed must not exceed either: (1) the runway weight limit V_R speed or (2) a 20 knot increase. For example, if the actual gross weight is 140,000 pounds and the runway limit is 150,000 pounds, mentally remember to rotate at the V_R speed which corresponds to the runway limit of 150,000 pounds.

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