NATIONAL TRANSPORTATION SAFETY BOARD
Office of Aviation Safety
Washington, D.C. 20594

July13, 2005

Errata & Addendum 1 to the Corporate Airlines Operations Group Factual Report

OPERATIONS

DCA05MA004

A. ACCIDENT

Operator:	Corporate Airlines, Inc. dba American Connection
Location:	Kirksville, Missouri
Date:	October 19, 2004
Time:	1945 Central Daylight Time
Airplane:	Jetstream 3201, Registration Number N875JX

Errata to:

2.2 First Officer Jonathan William Palmer

(Page 5)
F/O Palmer's date-of-hire with Corporate Airlines was July 19, 2004.

(Page 7)
F/O Palmer passed his last proficiency check on a BAE 3201 on August 15, 2004.

5.1 PILOT CALLOUTS, Altitude Awareness

(Page 8)
Sentence should read 100' above DH/MDA

6.1.2 STABILIZED APPROACH/CONSTANT-RATE/CONSTANT ANGLE

(Page 11)
The paragraph that said, "*The Federal Aviation Administration (FAA) recommends a stabilized approach concept. To the greatest extent practical, on final approach and within 500 feet AGL, the airplane should be on speed, in trim, configured for landing, tracking the extended centerline of the runway, and established in a constant angle of descent towards an aim point in the touchdown*

zone" was stated in part in the FAA aeronautical handbook, FAA-H-8083-3A Airplane Flying Handbook, Chapter 12 – TRANSISTION TO MULTI-ENGINE, Normal Approach and Landing.

Addendum 1 to:

1.0 History of Flight

(Page 3)
Add footnote to sentence: "The accident flightcrew flew three flights on the first day for a total of three hours and three minutes of flight time and were on duty for seven hours and fifty five minutes." The footnote should state that: Federal Aviation Regulation (FAR) 121.471 includes flight time limitations and rest requirements for all flight crewmembers. Corporate Airlines flight time limitations and rest requirements were the same as FAR 121.471.

6.1.2 STABILIZED APPROACH/CONSTANT-RATE/CONSTANT ANGLE GUIDANCE

(Pages 10-13) add:

The FAA aeronautical handbook, FAA-H-8261-1 INSTRUMENT PROCEDURES HANDBOOK Chapter 5 – APPROACHES, INSTRUMENT APPROACH PROCEDURE BRIEFING stated in Part:

STABILIZED APPROACH

In instrument meteorological conditions (IMC), you must continuously evaluate instrument information throughout an approach to properly maneuver the aircraft (or monitor autopilot performance) and to decide on the proper course of action at the decision point (DA, DH, or MAP). Significant speed and configuration changes during an approach can seriously degrade situational awareness and complicate the decision of the proper action to take at the decision point. The swept wing handling characteristics at low airspeeds and slow engine-response of many turbojets further complicate pilot tasks during approach and landing operations. You must begin to form a decision concerning the probable success of an approach before reaching the decision point. Your decision-making process requires you to be able to determine displacements from the course or glidepath centerline, to mentally project the aircraft's three-dimensional flight path by referring to flight instruments, and then apply control inputs as necessary to achieve and maintain the desired approach path. This process is simplified by maintaining a constant approach speed, descent rate, vertical flight path, and configuration during the final stages of an approach. This is referred to as the stabilized approach concept.

A stabilized approach is essential for safe turbojet operations and commercial turbojet operators must establish and use procedures that result in stabilized approaches. A stabilized approach is also strongly recommended for propeller-driven airplanes and helicopters. You should limit configuration changes at low altitudes to those changes that can be easily accommodated without adversely affecting your workload. For turbojets, the airplane must be in an approved configuration for landing or circling, if appropriate, with the engines spooled up, and on the correct speed and flight path with a descent rate of less than 1,000 FPM before descending below the following minimum stabilized approach heights:

• For all straight-in instrument approaches (this includes contact approaches) in IFR weather conditions, the approach must be stabilized before descending below 1,000 feet above the airport or TDZE.

• For visual approaches and straight-in instrument approaches in VFR weather conditions, the approach must be stabilized before descending below 500 feet above the airport elevation.

• For the final segment of a circling approach maneuver, the approach must be stabilized 500 feet above the airport elevation or at the MDA, whichever is lower.

These conditions must be maintained throughout the approach until touchdown for the approach to be considered a stabilized approach. This also helps you to recognize a windshear situation should abnormal indications exist during the approach.

DESCENT RATES AND GLIDEPATHS FOR NONPRECISION APPROACHES

Maximum Acceptable Descent Rates: Operational experience and research have shown that a descent rate of greater than approximately 1,000 FPM is unacceptable during the final stages of an approach (below 1,000 feet AGL). This is due to a human perceptual limitation that is independent of the type of airplane or helicopter. Therefore, the operational practices and techniques must ensure that descent rates greater than 1,000 FPM are not permitted in either the instrument or visual portions of an approach and landing operation

The FAA 8400.10 Air Transportation Operations Inspector's Handbook, Volume 4, chapter 2, section 3, stated in part:

Paragraph 479. MAXIMUM SINK RATES.

A. Perceptual Limitations. Restricted seeing conditions significantly affect a pilot's ability to visually detect or perceive vertical height, sink rate (vertical velocity), and vertical acceleration. As seeing conditions decrease, the pilot's ability to perceive vertical height, sink rate, and vertical acceleration degrades faster than the ability to perceive lateral errors and lateral accelerations (see discussion of visual illusions in paragraph 509). Personnel establishing operating minimums must consider these human perceptual limitations.

B. Aircraft Structural Limitations. According to structural design criteria, the aircraft structure must tolerate touchdown sink rates (vertical velocity) of at least 10 feet per second (600 fpm). Touchdown sink rates higher than the maximum rates evaluated during the certification of an aircraft can cause serious structural damage including catastrophic failure. Therefore, instrument procedure design must provide for sink rates which give a pilot the capability of detecting unacceptable situations and adjusting the flightpath to achieve a safe landing considering available visual aids and operating minimums. Visual aids and operating minimums must provide a high probability that a pilot will be able to adequately control the aircraft and adjust the vertical flightpath to achieve acceptable sink rates at touchdown and touchdown within the touchdown zone.

C. Maximum Acceptable Sink Rates. Operational experience and research has shown that a sink rate of greater than approximately 1000 feet per minute (16.67 fps) is unacceptable during the final stages of an approach (below 1000 feet above ground level). This is due to a human perceptual limitation which is independent of the type of airplane operated and is equally applicable to helicopters. Therefore, the instrument approach procedures and the operational

practices and techniques must ensure that sink rates greater than 1000 feet per minute are not required or permitted in either the instrument or visual portions of an approach and landing operation. Operating minimums and available visual aids must provide reasonable assurance that a pilot will have adequate external visual references in the visual portions of all instrument flight procedures (certain CAT III operations excepted). To be considered adequate, these external visual references must permit a pilot to adequately perceive sink rates and manually maneuver the aircraft (or evaluate autopilot performance) to achieve an acceptable touchdown sink rate and touchdown point, considering the operating minimums and the available visual aids.

Paragraph 491. CONCEPT OF MINIMUM DESCENT ALTITUDE AND MISSED APPROACH POINT (MDA/MAP)

MDA is the lowest permissible height at which a nonprecision approach can be continued by reference solely to flight instruments.

Submitted by

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David Tew
Operational Factors Group Chairman