NTSB Identification: **LAX98LA093**.
The docket is stored in the Docket Management System (DMS). Please contact
Records Management Division
Accident occurred Tuesday, February 03, 1998 in MESA, AZ
Probable Cause Approval Date: 02/15/2001
Aircraft: Boeing MD600N, registration: N9204D
Injuries: 1 Uninjured.

While in the process of verifying a height/velocity performance data point, the pilot entered an autorotation at takeoff power and maximum gross weight. The onboard telemetry revealed that the pilot reduced the throttle to flight idle at the entry point but that the remaining momentum caused the aircraft to accelerate and climb. During the descent, the main rotor rpm decayed and an excessive vertical sink rate developed. The aircraft landed hard at the intended touchdown point. The aircraft was hover-taxied from the landing area and a normal shutdown was completed. The test pilot reported that the height/velocity data point was outside the aircraft's performance capabilities.

The National Transportation Safety Board determines the probable cause(s) of this accident as follows:

The attempt by flight test engineers to verify a height/velocity data point that was subsequently shown to be outside the aircraft's performance capabilities.

Full narrative available
LAX98LA093

On February 3, 1998, at 0935 hours mountain standard time, a Boeing MD600N, N9204D, experienced a hard landing while performing an autorotative landing at Falcon Field, Mesa, Arizona. The aircraft sustained substantial damage; however, the pilot, the sole occupant, was not injured. The aircraft was being operated as a test flight by Boeing Mesa when the accident occurred. The flight originated in Mesa at 0736 on the morning of the accident. Visual meteorological conditions prevailed at the time and no flight plan was filed.

At the time of the accident, the pilot was in the process of verifying a theoretical height/velocity performance data point. He had entered an autorotation at 14 feet agl and 30 knots airspeed while at takeoff power, and a gross weight of 4,100 pounds. The planned entry point was 10 feet agl and 20 knots airspeed. The onboard telemetry verified that the pilot had reduced the throttle to flight idle at the entry point. After the throttle reduction, however, the remaining momentum allowed the aircraft to accelerate to 30 knots and climb an additional 23 feet agl. During the subsequent descent, the main rotor rpm decayed and an excessive vertical sink rate developed. The aircraft landed hard at the intended touchdown point, while in a near level attitude. The aircraft was hover-taxied from the landing area and a normal shutdown was completed.

A postaccident inspection of the aircraft revealed the airframe and landing gear exhibited bending, cracking, and tearing from fuselage station (FS) 78.5 to FS44.65. The bulkhead at FS124 and the engine door frame at FS137.5 were buckled and cracked on both the left and right sides. The cockpit seat pan support structures were buckled. The right and left landing gear struts were also bent and displaced.

The test pilot reported that the height/velocity data point attempted was shown to be outside the aircraft's performance capabilities.

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