

NTSB Identification: **LAX96LA207**.

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Accident occurred Tuesday, May 28, 1996 in THERMAL, CA

Probable Cause Approval Date: 08/20/1996

Aircraft: McDonnell Douglas MD-600, registration: N600RN

Injuries: 1 Uninjured.

The flight was part of an engineering test flight series to complete the Part 27 certification for a new rotorcraft. The specific test point was part of a flight strain survey and involved cyclic control reversals. The pilot had set the parameters and executed the cyclic control inputs as planned. Almost simultaneous with the aft movement of the cyclic there was a loud noise and immediate vibrations in the aircraft and the controls. A pilot in the chase aircraft informed the pilot that a main rotor blade had struck and severed the tail boom. A power off autorotation was accomplished without the tail rotor system. The resultant hard landing was onto a pile of dry brush which was ignited by the hot engine exhaust. The brush fire destroyed the aircraft.

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

inadequate design of the stress limits for cyclic control of the helicopter.

[Full narrative available](#)

LAX96LA207

On May 28, 1996, about 0711 hours Pacific daylight time a McDonnell Douglas MD-600 helicopter, N600RN, was destroyed during flight tests at Thermal, California. The pilot was not injured. The helicopter was in a flight test program for FAA certification under 14 CFR Part 27. The specific test point at the time of the mishap was part of a flight strain survey and involved cyclic control reversals.

The pilot set the parameters and executed the cyclic inputs as planned. Almost simultaneous with the aft movement of the cyclic there was a loud noise and immediate vibrations in the aircraft and controls. There was a chase aircraft for the mission and the chase pilot advised that the tail boom had been struck by a main rotor blade and had separated from the airframe. The pilot of the mishap aircraft then experimented with powered flight, but found that the right yaw was not controllable. He elected to continue the power off autorotation with a controllable left yaw. The autorotation was continued to a vacant field with some piles of brush and other desert debris. The pilot used available rotor rpm, cyclic, and collective control to execute a modified autorotation landing. The resultant landing was onto a brush pile with some skid and main rotor blade damage. The engine exhaust was adjacent to dry brush and grass which resulted in a grass fire. The ground fire destroyed the helicopter.

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