

Bulletin Addition

Aircraft Type and Registration:	MBB-BK 117 C-2, G-MPSB
Date & Time (UTC):	12 March 2021 at 1150 hrs
Location:	North Weald Airfield, Essex
Information Source:	AAIB Field Investigation

AAIB Bulletin No 03/2022, page 34 - 57 refers

On 12 March 2021, G-MPSB, an MBB-BK 117 C-2 helicopter suffered a firm landing during the demonstration of a Category A (Cat A) Clear Heliport takeoff procedure with a simulated engine failure after takeoff decision point. The landing did not meet the manufacturer's definition of a 'hard' landing, but resulted in damage to the aircraft's skid assembly.

The engine failure was simulated by the commander reducing Engine No 1's throttle to IDLE. Shortly afterwards the commander increased the throttle setting, but Engine No 1 did not respond. During attempts to resolve the problem, the throttle setting for Engine No 2 was inadvertently reduced, resulting in insufficient power being available for continued safe flight. The investigation found that Engine No 1 probably did not respond because the rotor rpm droop compensation had been inadvertently trimmed in the wrong direction.

An alternative means of demonstrating the procedure was possible using a manufacturer's one engine inoperative (OEI) training device that employs collars to restrict throttle movement. The manufacturer explicitly required use of the device for Cat A OEI training when at maximum training gross mass (MTGM). It was prohibited for use by the operator due to previous overtorque events when using it.

The investigation report was published in February 2022 and can be accessed at: <https://www.gov.uk/aaib-reports/aaib-investigation-to-mbb-bk-117-c-2-g-mpsb>.

Safety recommendation

The investigation found that the event might have been avoided by using a different throttle handling technique when simulating the engine failure, and the helicopter manufacturer stated that it intended to take two safety actions:

1. To develop formal guidance to pilots delivering simulated OEI training in the helicopter using the one engine at IDLE technique.
2. Review the appropriateness and scope of the rotorcraft flight manual (RFM) limitation requiring the use of the manufacturer's training device when conducting OEI training at MTGM.

The helicopter manufacturer has not taken the intended safety action. Accordingly, the following two Safety Recommendations are made.

Safety Recommendation 2024-002

It is recommended that Airbus Helicopters Deutschland GmbH develop formal guidance to pilots delivering simulated one engine inoperative training in MBB-BK 117 helicopters using the one engine at IDLE technique.

Safety Recommendation 2024-003

It is recommended that Airbus Helicopters Deutschland GmbH review the appropriateness and scope of the MBB-BK 117 rotorcraft flight manual limitation requiring the use of the manufacturer's training device when conducting one engine inoperative training at maximum training gross mass.