



Safety recommendation no. 502

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Safety deficit	On 13th July 2013, a flight instructor and a trainee pilot carried out a training flight with a Cabri G2 helicopter. Whilst completing landing exercises, the crew heard a loud noise which was followed by the development of an odour. Together with a mechanic, they carried out in-depth inspections in open terrain. The parties involved saw the loose power supply unit for the strobe light in a recess next to the main rotor transmission and the singed surface coating of the foam air filter in close proximity to the exhaust as possible explanations for what had been noticed during the flight. During the subsequent flight back, which took 10 minutes, the odour developed again, followed by smoke coming from the engine bay. The flight instructor immediately initiated a precautionary landing. In the process, the cooling fan of the air cooling system disintegrated and caused further collateral damage in the engine bay and engine failure. Subsequently, the crew successfully carried out an autorotation. The investigation showed that the failure of the cooling fan could be attributed to fatigue in the material, inadequate constructive design and the material not complying with the required specifications. It also became clear that the service bulletins which had been published by the manufacturer were not sufficient to guarantee safe operation.
Safety recommendation	The European Aviation Safety Agency (EASA) should ensure that the manufacturer Hélicoptères Guimbal immediately checks the operational safety of the cooling fan in the cooling system of Cabri G2 helicopters across the entire fleet and draws up an appropriate inspection programme for continued operation.
Addressees	EASA Europäische Agentur für Flugsicherheit
Stage of the implementation	Partially implemented. In a letter dated 24th November 2016, the EASA addresses the binding service bulletins and airworthiness directives published by helicopter manufacturer Hélicoptères Guimbal and by the EASA. The relevant checks uncovered several components with fractures. The checks could be carried out without any particular problems. The EASA acknowledges the necessity to improve the production process for the front disc of the cooling fan (see safety recommendation no. 503). The manufacturer believes that fracture development is primarily dependent on the number of start-stop cycles. Accordingly, these figures were included and published in airworthiness directive 2016-0033 by the EASA.
Investigation report concerning the safety recommendation	<u>Schlussbericht</u> <u>Final report</u>