

Aircraft: Enstrom F28A G-BBIN

Year of Manufacture: 1973

Date and time (GMT): 13 December 1982 at 1600 hrs

Location: ½ N M North of Shoreham Airport

Type of flight: Training - Dual

Persons on board: Crew - 2 Passengers - Nil

Injuries: Crew - Nil Passengers - N/A

Nature of damage: Undamaged

Commander's Licence: Airline Transport Pilot's Licence (Helicopters)
Full Instructor's Rating

Commander's Age: 38 years

Commander's total flying experience: 4070 hours (of which some 250 hours were on type)

The helicopter was clearing to the north of Shoreham when the crew, a C F I and a student, noticed a drop in both engine and main rotor RPM. After reducing collective pitch and increasing power to recover RPM, they became aware of a 'hot/burning' smell and made a successful autorotative landing without further delay. All indications appeared normal before shutdown, as indeed they had been before departure.

Inspection next day revealed metallic debris on the main gearbox oil filler screen and drain plug. Subsequent removal and strip of the gearbox found extensive fracturing present on the ring-gear carrier which had caused the loss in input pinion torque transmission to the main rotor drive-shaft. Contact between the almost totally fractured and distorted lower diaphragm of the carrier and base of the gearbox had generated heavy metallic 'smearing' pick-up and overheating of the gearbox casing.

Failure of this ring-gear carrier part No 28-13106 is a known defect on Enstrom F28A helicopters and is the subject of an F.A.A. A.D No 74-05-03 which requires replacement of this carrier with an improved design standard, prior to the accumulation of 1000 hrs in service since new or last factory overhaul. Unfortunately, the above helicopter, like many others on the UK register, had not yet accumulated such flying time and had in fact only run some 405 hours since new.

The CAA has therefore issued a 'Letter to Operators' No 543 dated 23 December 1982 followed by A D No 007-12-82, requiring all unmodified F28A helicopters, before further flight, to have their ring-gear carriers replaced with the later standard.