

Aircraft: Boeing-Vertol 234 G-BWFC (heavy helicopter - public transport)

Year of manufacture: 1981

Date and time (GMT) 21 February 1983 at 1120 hrs

Location: 30 nautical miles NNE of Aberdeen

Type of flight: Non-scheduled passenger

Persons on board: Crew - 3 Passengers - 32

Injuries: Crew - Nil Passengers - Nil

Nature of damage: Fire damage to area forward of rear pylon.

Commander's Licence: Airline Transport Pilot's Licence (Helicopters)

Commander's age: 41 years

Commander's total flying experience: 5520 hours (of which 860 hours were on type)

The aircraft had been on a routine flight to the East Shetland Basin and was returning directly to Aberdeen from the Cormorant Alpha platform with 32 passengers and a crew of 3. Following take-off from Cormorant Alpha at 0940 hrs, the aircraft climbed to a cruising height of 6000 feet. At approximately 0955 hrs the crew were alerted by a brief flash of the ENG 1 CHIP DET caption on the annunciator panel, but this did not remain illuminated for more than a second. Two minutes later the same caption illuminated briefly again and the cabin attendant was instructed by the commander to examine the magnetic indicators on the maintenance panel situated in the ramp area. The magnetic indicator associated with the LEFT ENGINE TRANSMISSION CHIP had tripped but the cabin attendant was able to reset it. In accordance with normal procedures in force at the time, the flight was continued with the crew monitoring the condition of the affected gearbox by reference to the oil temperature and pressure gauges in the cockpit.

The ENG 1 CHIP DET caption continued to flash at progressively shorter intervals as the flight continued but all other indications were normal until 1120 hrs when the aircraft was approximately 5 miles from the Aberdeenshire coast. At this time there was a gradual increase in No 1 engine torque from the matched cruise power setting of 55%. Operation of the engine emergency beep trim system was not effective in containing the torque rise and when this had reached 75% the Commander closed down No 1 engine. As he did so, captions illuminated indicating rotor brake ON and failure of the primary and auxiliary transmission lubrication systems and at the same time the rear of the main cabin began to fill with a light coloured smoke. ATC were informed, although a distress call was not made and an immediate descent was made. The heating system was selected to RAM VENT which was effective in clearing the cabin of smoke and the aircraft landed at Longside at 1126 hrs without further incident.

Subsequent investigation revealed a failure of the input shaft main roller bearing in the No 1 engine transmission and disintegration of the drive shaft between the engine transmission and the combining gearbox. Fire in the area forward of the rear pylon had caused damage to electrical wiring, lubrication pipes and minor damage to local structure.

The Chief Inspector of Accidents has ordered an Inspector's Investigation under the Civil Aviation (Investigation of Accidents) Regulations 1969.