

No: 10/90

Ref: EW/G90/07/36

Category: 2c

**Aircraft Type
and Registration:**

Bell 47 G3B1, G-BFJN

No & Type of Engines: 1 Lycoming TVO-435-B1A piston engine

Year of Manufacture: 1965

Date and Time (UTC): 23 July 1990 at 1600 hrs

Location: Buxton, Derbyshire

Type of Flight: Commercial

Persons on Board: Crew - 1 Passengers - None

Injuries: Crew - None Passengers - N/A

Nature of Damage: Slight damage to main rotor blade and to tubular member in tail-boom

Commander's Licence: Airline Transport Pilot's Licence

Commander's Age: 42 years

**Commander's Total
Flying Experience:**

5,450 hours rotary wing (of which 3,000 were on type)
120 hours fixed wing

Information Source: Aircraft Accident Report Form submitted by the pilot and telephone conversation with company carrying out initial repairs

The aircraft was engaged on spraying operations. The pilot reported that after a run at 50 ft A.G.L. he began a climb during which, he became aware of a loss of rotor rpm with an associated loss of performance. No satisfactory landing site was immediately available, so the aircraft was manoeuvred towards a more distant area for a run-on landing. A further loss of performance occurred during this manoeuvre and the left-hand spray boom struck a small tree. The pilot was nevertheless able to make a semi-controlled landing. After doing so he judged that no damage had occurred to the aircraft other than to the spraying equipment; the engine was running normally with no unusual instrument indications and no excessive vibration was present. At this stage the pilot considered the position of the aircraft to be unsuitable to carry out a shutdown, so he flew a short distance to a more suitable site and landed again.

On examination, minor damage to a main rotor blade was noted together with damage to a tubular member of the tail boom.

A detailed examination of the engine revealed no single problem which could account for a major loss of power. It was noted, however, that the hot-air valve was not moving correctly to the 'cold' position and the transition piece part of the induction system ducting in the area of the turbo-charger, appeared to have an incorrectly fitted seal which may have been allowing some air leakage. In addition, some slight adjustment was made to the setting of the density controller, after which it was judged by the company carrying out the work that an improvement of power output had been achieved.