

**Aviation Safety Investigation Report  
199300126**

**Aerospatiale  
SA.365C-1**

**01 February 1993**

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**NOTE: All air safety occurrences reported to the ATSB are categorised and recorded. For a detailed explanation on Category definitions please refer to the ATSB website at [www.atsb.gov.au](http://www.atsb.gov.au).**



After lift off, the helicopter was hovered in ground effect for a performance check. Satisfied that there was an adequate margin of power, the pilot climbed to a height of 80 ft before selecting a nose down attitude to initiate forward flight. At that point the main rotor low RPM warning sounded, which was confirmed by a low indication of main rotor RPM. The pilot immediately lowered the collective and commenced a descent, in preparation for a downwind landing onto the helipad. A turn to the left was commenced, during which it became apparent to the pilot that the helicopter lacked the performance to safely reach the helipad, so he decided to make a downwind landing on an adjacent road.

The helicopter made a running touchdown on the road but, during the groundroll, the main rotor blades collided with the corner of a steel framed building. The helicopter then veered to the left, colliding with a boundary fence. The main rotor blades were destroyed, resulting in major damage to the entire helicopter.

An examination of both engines and associated components did not detect any pre-existing defects. The takeoff weight was calculated to have been 3342 kg, some 200 kg heavier than the maximum predicted OGE hover weight for the existing conditions. The reported performance of the helicopter would suggest that assistance from the headwind experienced during lift off and initial climb was critical. The reduction in main rotor RPM at a crucial stage of flight probably resulted from overpitching of the main rotor due to a short term loss of headwind, associated with fluctuating wind conditions.

#### Safety Action

As a result of the investigation into this occurrence, the Bureau of Air Safety Investigation issued the following Interim Recommendations to the Civil Aviation Authority in February 1993.

#### Interim Recommendations:-

1. That the Civil Aviation Authority examine the structure of the seat attachments and seats fitted to this helicopter, and other helicopters of the same type, to ensure compliance with the airworthiness certification standards to which they were built.

#### CASA Response

Although it appeared that the failure (of the seat attachments) was inappropriate, given the degree of impact, the installation complied with the design criteria.

Response classification: CLOSED - ACCEPTED

2. That the Civil Aviation Authority ensure that other French certificated helicopters with the same (or similar) seat attachments comply with their airworthiness certification standard.

#### CASA Response

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The introduction of dynamic test criteria for new helicopter seats addresses more realistically the crash impact scenario. However, this applies only to helicopters whose certification basis is post 1988.

This particular incident, and CASA's concerns related to it, were presented at the Helitech conference in Canberra in 1993. I understand that most SA 365C aircraft operated by Australian rescue services have been modified to provide improved seat retention.

A recent accident in the United Kingdom involving an AS 350B revealed the possibility of a similar, but more severe, circumstance (AAIB report 4/96 refers). As a result, the UK CAA and the DGAC are investigating, in conjunction with Eurocopter.

To date, CASA has found no justification to issue an Airworthiness Directive requiring modifications to the seat attachments of Aerospatiale helicopters.

Response classification: CLOSED - ACCEPTED

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