Aviation Safety Investigation Report 199401431

Bell Helicopter Co JetRanger III

31 May 1994

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Aviation Safety Investigation Report

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Occurrence Number: 199401431 **Occurrence Type:** Accident
Location: Rosebud
State: VIC **Inv Category:** 3
Date: Tuesday 31 May 1994
Time: 1735 hours **Time Zone** EST
Highest Injury Level: Fatal
Injuries:

	Fatal	Serious	Minor	None	Total
Crew	1	0	0	0	1
Ground	0	0	0	0	0
Passenger	1	0	0	0	1
Total	**2**	**0**	**0**	**0**	**2**

Aircraft Manufacturer: Bell Helicopter Co
Aircraft Model: 206B (III)
Aircraft Registration: VH-BKG **Serial Number:** 3129
Type of Operation: Non-commercial Pleasure/Travel
Damage to Aircraft: Destroyed
Departure Point: Port Melbourne VIC
Departure Time: 1710 EST
Destination: Cape Schanck VIC

Crew Details:

Role	Class of Licence	Hours on Type	Hours Total
Pilot-In-Command	Private	372.0	460

Approved for Release: Friday, March 15, 1996

Factual Information

The helicopter was used by the pilot to commute daily between his home at Cape Schanck and the Port Melbourne Helipad. At 1555 EST he obtained aerodrome forecasts for Melbourne and Moorabbin airports together with an area forecast, covering the area for the trip home. Those forecasts indicated that showers associated with patches of low cloud could be expected.

At 1710 the pilot reported to Melbourne radar advisory service (RAS) that he had departed Port Melbourne for Cape Schanck and was tracking coastal at 700 ft. At 1715 he reported to Moorabbin Tower that he was at Brighton at 700 ft for Cape Schanck, tracking via the coast and was in receipt of the Moorabbin automatic terminal information service (ATIS). The Moorabbin ATIS at that time indicated that the wind was a light northerly, the visibility was restricted to 3,000 m in rain and visual flight rules (VFR) operations were restricted.

At 1728 the pilot reported to Melbourne Flight Information Service that he was at Mornington, at 700 ft, for Cape Schanck. No further communications were received from the helicopter. Numerous witnesses close to the accident site either heard and/or saw the helicopter approaching. It was observed flying low, beneath low cloud and in steady rain, in a southerly direction parallel to a main road. It then commenced a left turn over some farm houses and a short distance further on it flew into the ground.

Witnesses reported that the weather in the area of the accident site consisted of low cloud, visibility reduced in steady rain, very dark conditions below the cloud and a light wind. The post-accident report from the Bureau of Meteorology confirmed the witness reports. The reported conditions were not suitable for visual meteorological conditions operations.

Recorded radar data showed that the helicopter tracked via the coast from Port Melbourne to the Rosebud area at altitudes of between 300 and 700 ft. Approaching Arthur's Seat, a 1046 ft spot height, no further radar returns were received from the helicopter's transponder, indicating that the transponder had been either turned to standby or off. Some primary radar returns were received but these were lost approaching Rosebud, probably indicating that the helicopter was then below radar coverage. The distance from the last transponder return to the accident site was approximately 11 km.

The time of the accident was estimated to be 1737 which was between one and two minutes before calculated last light at Rosebud. Actual last light occurred earlier because of the weather conditions.

All of the pilot's flight time was logged on helicopters and although he had no instrument flying qualifications, he held a night VFR rating.

A detailed examination of the wreckage and the accident site indicated that the helicopter flew into the ground while turning to the left with the engine developing significant power. The examination did not reveal any pre-existing defects that could have contributed to the accident.

The only technical aspects meriting discussion were the pre-crash condition of the attitude indicator (AI) and the altimeter.

Upon disassembly of the AI, a small stop pin was found dislodged from its locating hole. A specialist examination concluded that it was most likely that the pin was dislodged during the accident. If the stop pin was dislodged prior to flight, then the AI could not have been caged or subsequently erected on startup. Had this been the case, then it is reasonable to assume that the pilot would have noted this and been aware that the AI was unreliable. The pilot was neither trained nor qualified to operate the helicopter by reference to the AI.

The altimeter had a general error of minus 120 ft across its operating range. At 1,000 ft the error was 110 ft meaning the aircraft would be 110 ft higher than the altitude indicated on the altimeter.

During the investigation, the pilot's night flying training record was checked. Some of that training was completed at his property at Cape Schanck where there was limited ground lighting. On occasions, during circuit training, it was necessary to fly in a direction which was out of sight of all ground lighting. On several occasions when this occurred, the pilot experienced difficulty controlling the helicopter and the instructor had to take control.

Findings

1. The pilot held a night-VFR rating but he was not instrument rated (ie he was not qualified to fly in instrument meteorological conditions).

2. There were no pre-existing defects found with the helicopter that could have contributed to the accident.

3. The pilot obtained appropriate weather forecasts prior to the flight.

4. The en route weather conditions encountered by the pilot were in accord with the area forecast and were not suitable for night-VFR flight.

5. The helicopter was flown at en route altitudes of between 300 and 700 ft.

6. At impact the engine was producing considerable power and the helicopter was travelling at a significant forward speed.

Significant Factors

The following factors were considered relevant to the development of the accident:

1. The helicopter was flown into non-VMC at night.

2. The pilot probably lost visual reference, became disoriented and flew the helicopter into the ground.