Aviation Safety Investigation Report 199303406

Bell Helicopter Co
Ranger

23 October 1993

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Occurrence Number: 199303406 **Occurrence Type:** Accident
Location: 10km SE Whyalla
State: SA **Inv Category:** 3
Date: Saturday 23 October 1993
Time: 1345 hours **Time Zone** CST
Highest Injury Level: Fatal
Injuries:

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

Aircraft Manufacturer: Bell Helicopter Co
Aircraft Model: 47J-2A
Aircraft Registration: VH-KHZ **Serial Number:** 3325
Type of Operation: Non-commercial Pleasure/Travel
Damage to Aircraft: Destroyed
Departure Point: Whyalla SA
Departure Time: 1330 CST
Destination: Parafield SA

Crew Details:

Role	Class of Licence	Hours on Type	Hours Total
Pilot-In-Command	Commercial	290.0	2000

Approved for Release: Thursday, June 23, 1994

The helicopter was being flown from Ceduna to Parafield, with planned refuelling stops en route. It was initially refuelled with avgas carried in jerry cans, then later with super petrol (mogas) obtained from a service station at Iron Knob. The jerry cans used were reported to be clean, and the fuel uncontaminated. Prior to landing at Iron Knob, the pilot landed the helicopter on a clay pan and idled the engine for a short time to prevent possible overheating due to a reported partial oil cooler airflow restriction. It was refuelled with avgas at Whyalla and fuel drain checks were carried out. The jerry cans were also refilled and loaded onto the helicopter.

The radio transceiver fitted to the helicopter was unserviceable and the pilot had been using a hand held portable transceiver for communications. At Iron Knob he contacted Parafield Air Traffic Control (ATC) by telephone, advised of the radio problem, and of his intention to use the portable radio for his arrival at Parafield.

Before departing Whyalla the pilot made a taxiing call which was recorded on the Whyalla Airport 'Avdata' tape. His initial track was over Spencer Gulf towards Port Pirie. The weather was fine with a strong north to north westerly wind at 20-25 knots, gusting to 35 knots, with a temperature of 31 degrees celsius.

The passenger recalled that about five minutes after departing Whyalla, when the helicopter had climbed to approximately 1,000 feet, it suddenly turned left through 180 degrees, into wind, and the pilot advised him that they were going to ditch. The passenger said he had not noticed any change to the engine note, or any other problems prior to the helicopter turning, but during the descent he noticed that the cabin noise level had decreased, and he could now communicate with the pilot without using the intercom, or shouting.

The pilot instructed the passenger (who had had some aeronautical experience) to make a 'mayday' call on the portable radio. The passenger was unsure of the frequency selected, but believes that it was still tuned to the Whyalla mandatory traffic advisory frequency (MTAF). This call was not heard by any other aircraft, or recorded on the Whyalla 'Avdata' tape. The passenger also used his mobile telephone in an unsuccessful attempt to contact his home, and Parafield ATC.

The passenger reported that the helicopter impacted the water in a nose down, left skid low attitude following a stable autorotational descent. The plexiglass bubble broke on impact, and the helicopter sank immediately. The pilot, who was knocked unconscious at impact, was released from his seatbelt by the passenger and pushed to the surface, where he quickly recovered. However, the pilot later drowned.

With this type of helicopter, following a loss of engine power, torque created by the rotation of the main rotor system causes the fuselage to turn left which can be corrected by pilot input through the anti-torque (tail rotor) system. A failure of the anti-torque system, with the engine still delivering power, would induce a turn to the right.

The passenger's recollections of the event indicate that the helicopter suffered a sudden loss of engine power, followed by a 180 degree turn to the left. The pilot corrected for this turning and controlled the helicopter in a normal autorotational descent.

Despite considerable search effort, the helicopter wreckage has not been located.

Neither the pilot nor the passenger was wearing a life jacket, as required by Civil Aviation Orders 20.11.5.1.1 (a) and 20.11.5.1.7 for overwater flights and there was no other flotation equipment on board.

Findings:

1. The helicopter had a valid maintenance release.

2. The pilot was correctly licensed and endorsed on the helicopter type.

3. The avgas and mogas used to refuel the helicopter en route to Whyalla was reported to have been supplied in clean jerry cans.

4. The helicopter had been refuelled with clean avgas at Whyalla.

5. The passenger's recollection is consistent with the helicopter suffering a sudden loss of power about 5 minutes after take-off.

6. The pilot carried out a normal autorotational descent to the sea.

7. There were no life jackets or flotation equipment on board the helicopter as required by Civil Aviation Orders.

8. The helicopter has not been located, therefore the reason for the ditching cannot be confirmed.

Significant Factor:

The following factor was considered relevant to the development of the accident:

Following a probable loss of engine power the pilot was forced to conduct an autorotational descent to the sea.