

**Aviation Safety Investigation Report
199502101**

**Kawasaki Heavy Industries
Kawasaki KH4**

08 July 1995

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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.

The Bureau did not conduct an on scene investigation of this occurrence. The information presented below was obtained from information supplied to the Bureau.

Occurrence Number: 199502101 **Occurrence Type:** Accident
Location: 45 km NE Glenayle Homestead
State: WA **Inv Category:** 4
Date: Saturday 08 July 1995
Time: 1205 hours **Time Zone** WST
Highest Injury Level: Serious
Injuries:

	Fatal	Serious	Minor	None	Total
Crew	0	1	0	0	1
Ground	0	0	0	0	0
Passenger	0	0	0	2	2
Total	0	1	0	2	3

Aircraft Manufacturer: Kawasaki Heavy Industries
Aircraft Model: 47G3B-KH4
Aircraft Registration: VH-JKX **Serial Number:** 2164
Type of Operation: Commercial Aerial Mapping/Photo/Survey
Damage to Aircraft: Substantial
Departure Point: 45 km NE Glenayle Homestead WA
Departure Time: 0650 WST
Destination: 45 km NE Glenayle Homestead WA

Crew Details:

Role	Class of Licence	Hours on	
		Type	Hours Total
Pilot-In-Command	Commercial	700.0	1600

Approved for Release: Thursday, October 12, 1995

The task required the helicopter to carry a surveyor to locations two kilometres apart along north east lines. The time on the ground at each location averaged four minutes and flight time between locations was approximately one minute. Normal endurance for the helicopter, excluding reserve fuel, was 150 minutes (70 l/hr). Due to the amount of time spent with the helicopter ground running at each location, the pilot recalculated the endurance and increased it to 240 minutes (45 l/hr), excluding reserve fuel.

The recalculated endurance was checked daily for any variation in consumption rates. Also taken into account was variation of distance back to the base camp at normal power setting (70 l/hr) for arrival with reserve fuel (25 l) intact on all occasions. On the day of the accident it was decided to carry two surveyors as they had to return to points which had already been surveyed. These points had been marked by pegs and surveyor tape to identify the locations. The second surveyor was carried to enable easier sighting of the survey pegs.

The pegs proved harder to locate than expected and the helicopter spent more time in the air than anticipated at each location. The aircraft had originally departed camp at 0700 and at 1045, 80 litres of fuel was added from jerry cans carried on board the aircraft. At 1140 the pilot advised the surveyors that they had to return to the camp which would have them back at 1200. A request by one of the surveyors to stop for a gravity reading at a position approximately one kilometre off the track to the camp site was agreed to. Approximately one kilometre from camp the engine stopped. The aircraft was at an approximate height of 80 ft on descent to the campsite with a tail wind of 15-20 kts at the time. The pilot attempted to turn the helicopter into wind to make a landing, however at 120 degrees from its original direction of travel to the left, the helicopter collided with the ground on the side of a dry creek bed.

Seven litres of fuel was drained from tanks, most of which would normally be unusable. At the time of the accident the fuel gauge indicated approximately one quarter full. The pilot did not consider the fuel gauge reliable enough to use as an indication of fuel contents and relied on a combination of dip stick readings, time in operations and fuel logs, based on average daily consumption rates, to determine the fuel state.

The investigation concluded that the extra weight of an additional passenger required more power when flying around to locate the survey pegs and the difficulty in locating the survey pegs required more hovering (at higher power settings) than anticipated. Overall hourly consumption rate had increased above planned levels leading to fuel exhaustion well before the pilots fuel logging indicated it might happen.

