NO. 93-003

HUGHES 369 HS

ZK-HQE

NEAR PAPAKAIO, 13 KM NORTH OF OAMARU

17 FEBRUARY 1993

A B S T R A C T

While the helicopter was being refuelled a bystander, who was the father of the two men conducting a spraying operation, walked into the aircraft's tail rotor and lost his life. The victim had been briefed on safety precautions and had observed them carefully but on this occasion he became distracted and walked into the danger area.

TRANSPORT ACCIDENT INVESTIGATION COMMISSION

AIRCRAFT ACCIDENT REPORT NO. 93-003

Aircraft Type, Serial Number and Registration:	Hughes 369 HS, 1140662S ZK-HQE
Number and Type of Engines:	One Allison 250 - C20
Year of Manufacture:	1974
Date and Time:	17 February 1993, 1955 hours NZDT*
Location:	Near Papakaio, 13 km north of Oamaru Latitude: 44°59'S Longitude: 170°59'E
Type of Flight:	Aerial Work - Agricultural
Persons on Board:	Crew: 1
Injuries:	Crew: 1 Nil Others: 1 Fatal
Nature of Damage:	Substantial - tail rotor
Pilot in Command's Licence:	Commercial Pilot Licence (Helicopter)
Pilot in Command's Age:	34
Pilot in Command's Total Flying Experience:	2899 hours 321 hours on type
Information Sources:	Transport Accident Investigation Commission field investigation
Investigator in Charge:	Mr J J Goddard

* All times in this Report are in NZDT (UTC + 13 hours)

1. NARRATIVE

1.1 The pilot had a number of aerial spraying jobs in the local area to complete during the day, which gave suitable settled weather for the task. His loader driver, who was his brother, drove their support vehicle between jobs.

1.2 Their father accompanied them throughout the day's work. He did not have any tasks to perform in relation to the helicopter, equipment or chemicals, and was accustomed to keeping out of the way while the helicopter was being loaded or fuelled. Essentially he was on a day out, watching the aerial spraying work in progress. He had done this on a number of previous occasions and was well familiar with the operation. He had been briefed on several occasions about the hazards of helicopters on the ground, and on how and when to approach the helicopter safely. His behaviour around the aircraft had been in accordance with his briefings.

1.3 The day's work proceeded well, with several jobs being completed. Mostly the father accompanied his son in the helicopter on the ferry flights between jobs, but he joined his other son on the ground while the productive spraying flights were made. When they repositioned for the last job, however, he travelled in the loader vehicle by road to the new site.

1.4 The vehicle arrived first at the site, which was a field of peas to be sprayed. The vehicle was parked alongside the fence outside the field and just past the access gate. This position allowed the loader driver to run the fuel hose for the helicopter from the vehicle through the fence into the field in preparation for refuelling the aircraft when it arrived.

1.5 When the helicopter arrived, the loader driver marshalled it to land in the field with its right side alongside the fence so that its fuel tank was accessible to the hose. In this position the helicopter was clear of and facing away from the open gateway, but the tail rotor and empennage was the closest part, some seven metres away from the gate.

1.6 As soon as the helicopter had landed, with the engine still running at flight idle, the loader driver connected the fuel hose and started refuelling it, while the pilot remained on board doing post-flight checks.

1.7 While the helicopter had been approaching to land, the father had been standing by the vehicle, outside the fence and well clear of the landing area. He had picked a handful of wild peas and was eating them while watching. During the landing, however, the rotor downwash had blown his cap off his head and into the adjoining water-race, where it was lost. This apparently disconcerted him, because shortly afterwards he walked into the field and stood about three to four metres behind the helicopter.

1.8 The loader driver had seen him move to this position but saw him stop clear, so he continued to concentrate on refuelling the helicopter.

1.9 Shortly afterwards the loader driver glanced up to see his father walking forwards, looking down at the peas in his hand, and approaching very close to the rotating tail rotor. He had no opportunity to warn him before the rotor blades struck his head. He collapsed beneath the tail of the helicopter and did not respond to immediate aid.

1.10 The helicopter was shut down and damage was found to both tail rotor blades.

1.11 Weather conditions and lighting were unlikely to have been a factor, as the wind was light and variable, with bright evening daylight beneath a thin layer of medium cloud. The helicopter was on a heading of 065° M, so the approach to the tail was down-sun. While the tail rotor had normal red and white markings, it would have been almost invisible as approached, in its plane of rotation.

1.12 During the previous spraying operations in this field, the loader vehicle had been positioned some 15 to 20 metres in from the gate so that the helicopter was able to be loaded well clear of any bystander access. This had not been done on this occasion because of concern about getting the vehicle stuck in mud in the gateway.

1.13 During the day, before the accident, 8.25 hours of flying had been done. Some fatigue may have reduced the alertness of each of the persons involved. It was unlikely that the victim had been affected by agricultural chemicals, as he had not handled any during the day.

2. FINDINGS

2.1 The victim walked into the rotating tail rotor of the helicopter.

2.2 The victim was distracted by his hat blowing off and was not looking where he was going.

2.3 The victim had been briefed about helicopter safety procedures and was familiar with the spraying operation which was in progress.

2.4 The landing position used for refuelling positioned the tail rotor of the helicopter close to the gateway into the field.

24 June 1993

M F Dunphy
Chief Commissioner