

COMMONWEALTH OF AUSTRALIA-BUREAU OF AIR SAFETY INVESTIGATION  
AIRCRAFT ACCIDENT INVESTIGATION SUMMARY REPORT

REFERENCE NO.  
V116/823/1002

1. LOCATION OF OCCURRENCE

3 km north-west of Lang Lang, Victoria		Elevation: 10 feet
Date: 7.1.82	Time: 1330 hours (approx)	Zone: ESuT

2. THE AIRCRAFT

Make and Model: Bell 206B Helicopter	Registration: VH-AJD
Certificate of Airworthiness: Issued on 25.3.75	
Certificate of Registration Issued to:	Operator:
Degree of Damage to Aircraft: Destroyed	Other Property Damaged: Nil
Defects discovered: Nil	

3. THE FLIGHT

Departure Point: French Island	Time of departure: 1322 hours
Destination: Not known (probably Yarra Bank helipad)	
Purpose of flight: Television News Assignment Class of Operation: Aerial work	

4. THE CREW

Name	Status	Age	Class of Licence	Hours on Type	Total Hours	Degree of Injury
	Pilot	35	Commercial Helicopter	2262	3713	Fatal

5. OTHER PERSONS (ALL PASSENGERS AND PERSONS INJURED ON GROUND)

Name	Status	Degree of Injury
	Passenger	Fatal
	Passenger	Fatal
	Passenger	Fatal
	Passenger	Fatal

## 6. RELEVANT EVENTS

The operator had an agreement with Herald-Sun TV Pty. Ltd. (HSV 7) to provide a helicopter and pilot on a daily basis for news assignments. On the day of the accident VH-AJD, with pilot, was allocated to this task.

At about 0830 hours the pilot made a routine engine-power check flight in the helicopter of about ten minutes duration.

At 1011 hours, in response to a request from HSV 7, the pilot submitted a flight plan to the Moorabbin Airport Briefing Office for a flight to the Yarra Bank helipad, French Island, Yarra Bank helipad and return to Moorabbin. The total fuel endurance shown on the plan was 200 minutes. The class of operation was shown as charter.

The helicopter departed Moorabbin at about 1020 hours with only the pilot on board and arrived at the Yarra Bank helipad at 1031 hours. There four passengers, of whom three were HSV 7 news staff, boarded the aircraft. The fourth passenger, , had business interests at French Island.

The helicopter departed from the helipad at 1036 hours and the pilot reported in the French Island "circuit area" at 1058 hours. After landing at French Island, all occupants disembarked.

At about 1250 hours, the news team was requested by telephone to return to Melbourne via the South Gippsland highway on completion of the task at French Island, to "check out" a fatal road accident near Lang Lang.

At about 1305 hours, the pilot and two members of the news team made a short local flight in the helicopter and completed some video recording of the French Island prison complex from the air. The two remaining passengers then boarded the helicopter. At 1323 hours the pilot reported departure from French Island and at 1328 hours he reported "circuit area" Lang Lang.

The helicopter was seen to approach the road accident site from the south-west at about 1000 feet AGL. It then made a wide right turn while descending and reducing speed and again approached on a north westerly heading, parallel to and about 50 metres to the left of the road.

When opposite the accident site, at an estimated height of 100-200 feet, the helicopter came to a hover for a short period. It then "fish-tailed" and began to rotate to the right in a horizontal plane and in a slightly nose-down attitude. The rate of rotation increased after about two turns and the helicopter completed an estimated five turns over a period of about 20 seconds. During this time it drifted downwind across the road and lost height until it struck the ground in an open field on the north-eastern side of the road, some 120 metres from the hover position.

AIRCRAFT ACCIDENT INVESTIGATION SUMMARY REPORT (CONT)	REFERENCE NO. V116/823/1002
---	--------------------------------

6. RELEVANT EVENTS (CONT'D)

The first impact with the ground was by the main rotor blades. The main impact was on the right skid and the right side of the nose. The tail rotor head was flung from the tail boom and both tail rotor blades broke off when the head struck the ground. The fuel tank cell burst on impact. The escaping fuel was ignited and fire enveloped the helicopter.

The source of the ignition of the fuel was not positively determined. The most likely source was arcing which occurred between the negative terminal of the battery and the positive terminal of the battery relay as a result of distortion of the nose structure and the battery support structure on impact.

Detailed examination of the burnt-out wreckage disclosed no evidence of any defect or malfunction which might have contributed to the accident.

It was not possible to determine with certainty the helicopter's weight and centre of gravity at the time of the accident. However, the available evidence indicates that the weight was close to but less than the maximum specified and the centre of gravity was within limits.

The height velocity diagram in the flight manual for VH-AJD advised against operation at various height/airspeed combinations including operation below approximately 40 knots at skid heights between 100 and 200 feet.

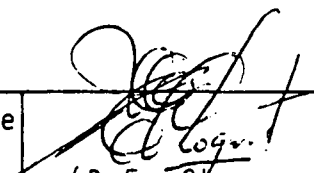
The weather at Lang Lang was clear with a temperature of 18°C. The surface wind was south-westerly at about 15 knots. It is estimated that the wind at 200 feet was also from the south-west, that is, directly from the left of the helicopter as it hovered, gusting between 15 and 25 knots.

Published information from various sources indicates that a loss of tail rotor effectiveness may occur in a helicopter of this rotor configuration when a number of factors in some combination are present. Hovering or low airspeed operations at high gross weight with a crosswind from the left are apparently relevant factors. Loss of tail rotor effectiveness would result in the helicopter rotating to the right.

7. RELEVANT FACTORS

1. The helicopter was operating at a high weight.
2. A strong gusty side wind was present.
3. The helicopter was hovering at a low height.
4. A loss of tail rotor effectiveness occurred for reasons which have not been determined.

Approved for publication under the provisions of Air Navigation Regulation 283(1)



(P.E. Choquenot)

Director

Date:

30.5.83

COMMONWEALTH OF AUSTRALIA-BUREAU OF AIR SAFETY INVESTIGATION  
AIRCRAFT ACCIDENT INVESTIGATION SUMMARY REPORT

REFERENCE NO.  
V116/823/1002

1. LOCATION OF OCCURRENCE

3 km north-west of Lang Lang, Victoria		Elevation: 10 feet
Date: 7.1.82	Time: 1330 hours (approx)	Zone: ESuT

2. THE AIRCRAFT

Make and Model: Bell 206B Helicopter	Registration: VH-AJD
Certificate of Airworthiness: Issued on 25.3.75	
Certificate of Registration Issued to: Jayrow Helicopters Pty. Ltd., Hangar 85, Moorabbin Airport, Victoria.	Operator: Jayrow Helicopters Pty. Ltd., Hangar 85, Moorabbin Airport, Victoria.
Degree of Damage to Aircraft: Destroyed	Other Property Damaged: Nil
Defects discovered: Nil	

3. THE FLIGHT

Departure Point: French Island	Time of departure: 1322 hours
Destination: Not known (probably Yarra Bank helipad)	
Purpose of flight: Television News Assignment Class of Operation: Aerial work	

4. THE CREW

Name	Status	Age	Class of Licence	Hours on Type	Total Hours	Degree of Injury
Douglas Patton HOGG	Pilot	35	Commercial Helicopter	2262	3713	Fatal

5. OTHER PERSONS (ALL PASSENGERS AND PERSONS INJURED ON GROUND)

Name	Status	Degree of Injury
Paul Gerard SULLIVAN	Passenger	Fatal
Nicole BEST	Passenger	Fatal
Blake Hampden HOBART	Passenger	Fatal
George SAMARGIS	Passenger	Fatal

## 6. RELEVANT EVENTS

The operator had an agreement with Herald-Sun TV Pty. Ltd. (HSV 7) to provide a helicopter and pilot on a daily basis for news assignments. On the day of the accident VH-AJD, with Mr Hogg as pilot, was allocated to this task.

At about 0830 hours the pilot made a routine engine-power check flight in the helicopter of about ten minutes duration.

At 1011 hours, in response to a request from HSV 7, the pilot submitted a flight plan to the Moorabbin Airport Briefing Office for a flight to the Yarra Bank helipad, French Island, Yarra Bank helipad and return to Moorabbin. The total fuel endurance shown on the plan was 200 minutes. The class of operation was shown as charter.

The helicopter departed Moorabbin at about 1020 hours with only the pilot on board and arrived at the Yarra Bank helipad at 1031 hours. There four passengers, of whom three were HSV 7 news staff, boarded the aircraft. The fourth passenger, Mr Samargis, had business interests at French Island.

The helicopter departed from the helipad at 1036 hours and the pilot reported in the French Island "circuit area" at 1058 hours. After landing at French Island, all occupants disembarked.

At about 1250 hours, the news team was requested by telephone to return to Melbourne via the South Gippsland highway on completion of the task at French Island, to "check out" a fatal road accident near Lang Lang.

At about 1305 hours, the pilot and two members of the news team made a short local flight in the helicopter and completed some video recording of the French Island prison complex from the air. The two remaining passengers then boarded the helicopter. At 1323 hours the pilot reported departure from French Island and at 1328 hours he reported "circuit area" Lang Lang.

The helicopter was seen to approach the road accident site from the south-west at about 1000 feet AGL. It then made a wide right turn while descending and reducing speed and again approached on a north westerly heading, parallel to and about 50 metres to the left of the road.

When opposite the accident site, at an estimated height of 100-200 feet, the helicopter came to a hover for a short period. It then "fish-tailed" and began to rotate to the right in a horizontal plane and in a slightly nose-down attitude. The rate of rotation increased after about two turns and the helicopter completed an estimated five turns over a period of about 20 seconds. During this time it drifted downwind across the road and lost height until it struck the ground in an open field on the north-eastern side of the road, some 120 metres from the hover position.

## 6. RELEVANT EVENTS (CONT'D)

The first impact with the ground was by the main rotor blades. The main impact was on the right skid and the right side of the nose. The tail rotor head was flung from the tail boom and both tail rotor blades broke off when the head struck the ground. The fuel tank cell burst on impact. The escaping fuel was ignited and fire enveloped the helicopter.

The source of the ignition of the fuel was not positively determined. The most likely source was arcing which occurred between the negative terminal of the battery and the positive terminal of the battery relay as a result of distortion of the nose structure and the battery support structure on impact.

Detailed examination of the burnt-out wreckage disclosed no evidence of any defect or malfunction which might have contributed to the accident.

It was not possible to determine with certainty the helicopter's weight and centre of gravity at the time of the accident. However, the available evidence indicates that the weight was close to but less than the maximum specified and the centre of gravity was within limits.

The height velocity diagram in the flight manual for VH-AJD advised against operation at various height/airspeed combinations including operation below approximately 40 knots at skid heights between 100 and 200 feet.

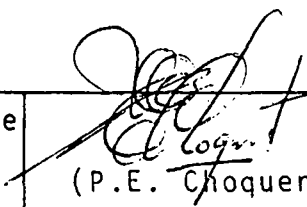
The weather at Lang Lang was clear with a temperature of 18°C. The surface wind was south-westerly at about 15 knots. It is estimated that the wind at 200 feet was also from the south-west, that is, directly from the left of the helicopter as it hovered, gusting between 15 and 25 knots.

Published information from various sources indicates that a loss of tail rotor effectiveness may occur in a helicopter of this rotor configuration when a number of factors in some combination are present. Hovering or low airspeed operations at high gross weight with a crosswind from the left are apparently relevant factors. Loss of tail rotor effectiveness would result in the helicopter rotating to the right.

7. RELEVANT FACTORS

1. The helicopter was operating at a high weight.
2. A strong gusty side wind was present.
3. The helicopter was hovering at a low height.
4. A loss of tail rotor effectiveness occurred for reasons which have not been determined.

Approved for publication under the provisions of Air Navigation Regulation 283(1)

  
(P.E. Choquenot) Director

Date:

30.5.83