

**Aviation Safety Investigation Report
199602526**

**Mooney Aircraft Corp
Mooney**

11 August 1996

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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.

Occurrence Number: 199602526 **Occurrence Type:** Accident
Location: 20km WSW Roma Aerodrome
State: QLD **Inv Category:** 3
Date: Sunday 11 August 1996
Time: 1833 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: Mooney Aircraft Corp
Aircraft Model: M20E
Aircraft Registration: VH-TCN **Serial Number:** 527
Type of Operation: Non-commercial Business
Damage to Aircraft: Destroyed
Departure Point: Longreach QLD
Departure Time: 1611 EST
Destination: Roma QLD

Crew Details:

		Hours on	
Role	Class of Licence	Type	Hours Total
Pilot-In-Command	Private	86.2	503

Approved for Release: Friday, September 12, 1997

FACTUAL INFORMATION

The pilot in command operated an aircraft maintenance business at Longreach and was engaged in work on an aircraft which would continue through the weekend into the following week. At relatively short notice, he was asked to carry out an engine change on an aircraft at Roma. He accepted this task and arranged to fly to Roma on the afternoon of 11 August 1996.

The aircraft departed Longreach at 1611 EST with full fuel tanks. Sunset in the Roma area was 1738, and last light was 1806. Weather in the area was fine, with no cloud. At Longreach, last light was 1838.

From about 1820, the crew of a regular public transport (RPT) aircraft was communicating with an aircraft they believed to be VH-ECN. Communications with this aircraft were very weak and the RPT crew was unable to confirm whether the aircraft was tracking west to Roma, or from the west to Roma, or whether it was at 5,000 ft or 9,000 ft. However, it was confirmed that the pilot had the aircraft's automatic direction finding navigation aid tuned to the Roma frequency and that the aircraft was tracking towards Roma. The RPT crew indicated that the pilot reported having some runway lights in sight but was unable to see the town. Communications between the two aircraft continued until after the RPT aircraft landed at Roma at 1831. Attempts to contact the aircraft at 1834 were unsuccessful. The communications had been conducted on the designated frequency for aircraft operating in the circuit area at Roma and were not recorded.

Early the following morning, a farmer found the wreckage of the aircraft on his property some 20 km WSW of Roma. The aircraft had initially struck the ground at about 10 degrees left bank, while in a 5-degree descent and tracking 074 degrees (approximately towards Roma). Aircraft speed at the time was about 150 kts. It bounced from this impact and travelled a further 440 m before the second, and main, impact. At this point, the aircraft was banked 55 degrees right, tracking 110 degrees, and descending at an angle of about 19 degrees.

The flight plan apparently used during the flight was recovered from the wreckage. It showed planned flight time as 144 minutes. The time "6:35" was written and circled on the plan. There was no indication on the plan denoting the time of last light at Roma. The aerodrome elevation for Roma (1,032 ft) was noted on the plan.

The aircraft

The aircraft maintenance release contained two entries stating "VFR until certified" and "no compass". It was established that, some months prior to the accident, the direct reading compass had been sticking but this had been rectified. The origin of the restriction to VFR flight could not be established.

Examination of the wreckage did not reveal any pre-existing condition which might have affected aircraft operation.

An emergency locator transmitter was found loose in the cabin area of the wreckage. Its antenna was not fitted and the switch was not set to the armed position. When tested after the accident, the unit functioned normally.

Personnel information

The pilot in command was aged 68 years. He had no night flying experience and had not undergone any training towards the issue of an instrument rating. His latest aviation medical examination, dated 24 November 1994, indicated a requirement to wear corrective spectacles for distance vision. In February 1995, the pilot in command underwent medical treatment to his right eye. Medical opinion indicated that, at the time of the accident, the pilot did not meet the medical standard for a class-2 medical certificate; nor did he meet the vision standard required for a licensed aircraft maintenance engineer. The pilot in command was not known to wear spectacles, and none were found at the accident site.

The passenger in the aircraft was aged 69 years. He had, before 1982, gained substantial experience as a flight engineer on RPT aircraft. He had a private pilot (aeroplane) licence and had flown 268 hours. He had received no night or instrument flying training. At his last aviation medical examination in February 1994, he was assessed as required to use vision correction. No spectacles were found at the accident site.

Search and rescue

After the crew of the RPT aircraft was unable to maintain radio contact with the aircraft, they advised Brisbane Flight Service of their communications with the aircraft they believed was VH-ECN. The information was passed to Brisbane Search and Rescue which established that VH-ECN was in a hangar near Brisbane. A check of flight plans and all reported movements failed to disclose any missing aircraft. The search-and-rescue activity ceased at this stage, pending further information.

The pilot in command had not submitted flight details to Airservices Australia, nor had he arranged with any person to confirm his arrival at Roma.

Black hole conditions

The latter stages of the flight were flown over dark, unlit terrain towards lights (most probably Roma township). Flying a visual approach in these conditions (known as a "black hole") has been associated with less reliable pilot control of approach path angle due to the lack of visual cues. On occasions pilots have overestimated their approach path angle and flown a shallow approach, sometimes resulting in ground impact short of the lit area.

Minimum safe altitude considerations

The published minimum safe altitude for aircraft operating at night within a 25-NM radius of Roma Aerodrome is 3,000 ft above mean sea level (AMSL). A visual descent may only be continued below this altitude when the aerodrome is in sight and the aircraft is within 3 NM (5 km) of the aerodrome. The elevation of the accident site was approximately 1,000 ft AMSL.

ANALYSIS

The flight departed Longreach too late to reach Roma before last light. There was no evidence that the difference between last light at Roma and last light at Longreach was considered during the planning for the flight. As the flight progressed, there were opportunities for the pilot to land the aircraft before darkness set in. However, the pilot's interest in reaching Roma to commence the engine change task may have over-ridden these considerations. With no night or instrument flying training, the pilot may not have been aware of the minimum safe altitude in the Roma area. However, he was aware of the aerodrome elevation for Roma, yet the aircraft descended to about this level some 20 km short of Roma. This could indicate that the pilot was conducting an approach towards the lights of Roma and did not pay sufficient attention to aircraft altitude as the aircraft descended.

SIGNIFICANT FACTORS

1. The pilot probably had a strong desire to reach the planned destination.
2. The flight did not depart in time to reach the destination before last light.

3. The pilot had received no night or instrument flying training.
4. The flight was continued after last light.
5. The aircraft descended to an altitude approximating that of the Roma Aerodrome elevation some 12 NM short of Roma.