

**Aviation Safety Investigation Report
198900825**

Cessna 210N

9 September 1989

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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: 198900825 **Occurrence Type:** Accident
Location: 55 kms North West of Borroloola, NT
Date: 9 September 1989 **Time:** 1651
Highest Injury Level: Nil
Injuries:

	Fatal	Serious	Minor	None
Crew	0	0	1	1
Ground	0	0	0	-
Passenger	0	0	0	5
Total	0	0	0	6

Aircraft Details: Cessna 210N
Registration: VH-BEK
Serial Number: 21063077
Operation Type: Charter
Damage Level: Destroyed
Departure Point: Darwin, NT
Departure Time: 1500
Destination: Borroloola, NT

Approved for Release: 17th August 1990

Circumstances:

Approaching top of descent at 10,000 feet, the pilot noticed smoke coming from under the instrument panel. The smoke rapidly increased in density until it was almost black in colour with a very strong petrochemical, choking odour. The pilot commenced a rapid descent and turned the aircraft towards the coast. He switched off all electrical services as flames appeared under the instrument panel. He extinguished these flames with the cockpit fire extinguisher and opened the cockpit window to provide fresh air. The pilot switched on the electrics to transmit a mayday call and talk to a company aircraft about 10 miles behind. However, flames reappeared so the electrics were again selected off. At no time did any circuit breakers operate. Passing about 7,000 feet in the descent, the engine failed without warning and could not be restarted. The pilot manoeuvred the aircraft for a wheels up landing on a dry tea tree swamp. On final approach, he unlatched the door to aid in emergency evacuation. The passenger in the right front seat attempted to exit the aircraft but was restrained by the pilot. This passenger had to keep her feet on the seat during the final 300 feet to avoid the flames. The pilot planned a high speed approach to ensure he did not undershoot the intended landing area. On short final, he selected full flap and, probably due to the short circuit behind the instrument panel, full flap was obtained. He also opened the air vents which increased the intensity of the fire but gave him good vision. After striking some small trees on final, the aircraft slid about 90 metres before coming to rest. All occupants evacuated safely through the doors. The pilot estimated that the cabin was engulfed in flames within 30 seconds of the aircraft stopping. It is most likely that the fire started as a result of electrical arcing caused by the failure of insulation on the wire carrying electrical power from the starter relay to the ammeter. The fire burnt through the magneto wire insulation, grounding the wires and stopping the engine.

Significant Factors:

The following factors were considered relevant to the development of the accident

1. The insulation on the starter relay to ammeter wire on the cabin side of the fire wall rubbed through.
2. An electrical short circuit developed, resulting in arcing which started a fire under the right side of the instrument panel.
3. The fire spread to the left side of the instrument panel and burnt through the magneto wire insulation resulting in engine failure.
4. The aircraft landed in unsuitable terrain.