



COMMONWEALTH OF AUSTRALIA

DEPARTMENT OF TRANSPORT

## AIRCRAFT ACCIDENT INVESTIGATION SUMMARY REPORT

Reference No

SI/784/1042

Publication of this report is authorised by the Secretary under the provisions of Air Navigation Regulations 283 (1)

## 1. LOCATION OF OCCURRENCE

Mannum, South Australia

Height a.m.s.l.

180 feet

Date

27.12.78

Time (Local)

1450 hrs.

Zone

CSuT

## 2. THE AIRCRAFT

Make and Model Cessna 210M	Registration VH-MMQ	Certificate of Airworthiness Valid from 8.3.78
Certificate of Registration issued to	Operator	Degree of damage to aircraft Substantial
		Other property damaged Fences
Defects discovered		

## 3. THE FLIGHT

Last or intended departure point	Time of departure	Next point of intended landing	Purpose of flight	Class of operation
Mannum	1450 hours	Mannum	Local flight	Private

## 4. THE CREW

Name	Status	Age	Class of licence	Hours on type	Total hours	Degree of injury
	Pilot	47	Private	600 (approx)	2400 (approx)	Serious

## 5. OTHER PERSONS (All passengers and persons injured on ground)

Name	Status	Degree of injury	Name	Status	Degree of injury
	Passenger	Minor		Passenger	Minor

## 6. RELEVANT EVENTS

The area from which the aircraft was operated on this occasion was orientated north-west, south-east and had a total length of 566 metres. The width of the prepared area was about 32 metres and the strip sloped up towards the north-west with a gradient of 2.57%. The surface of the runway was hard gravel. A housing estate adjoined the south-eastern end of the area and there were trees present at both ends of the strip.

The aircraft landed to the north-west after a flight from Parafield and was then parked some 20 metres from the south-eastern boundary. After disembarking the pilot expressed some concern at the length of the strip and about the presence of houses and wires at the south-eastern end. He elected to make a trial take-off towards the north-west with two passengers only, rather than the four adults and two small children which he had planned to uplift. The wind was virtually calm and the day was fine and warm, with the temperature about 27°C.

The aircraft engine was run up to a high power before the brakes were released and the take-off commenced uphill towards the north-west. After covering about three-quarters of the length of the strip, the aircraft lifted off and almost immediately assumed a left wing down attitude of about 45°. The aircraft turned slightly to the left, lost altitude and the left wing tip scraped the ground. The left wing then struck a tree and the aircraft veered further to the left and skidded across an adjoining road, coming to rest straddling an earth bank on the western side. The pilot suffered serious head injuries and was extricated from the wreckage by the passengers. He had not worn the shoulder sash of his safety harness. The extent of his injuries resulted in his being unable to recall the details of the take-off.

The aircraft type flight test data adjusted to the ambient operating conditions indicated that it required a take-off distance of 913 metres to reach 50 feet and the take-off safety speed of 75 knots and of this 685 metres would be ground run. A calculation based on the observed position at which the aircraft became airborne indicated that the airspeed at the time would have been about 57 knots. The aircraft in the take-off configuration would therefore have been in a virtually stalled condition and there is evidence that the stall warning horn sounded as the aircraft became airborne. The adoption of a banked attitude may not have been deliberate on the part of the pilot, but in any case would have further degraded the ability of the aircraft to safely complete the take-off.

## 7. OPINION AS TO CAUSE

The probable cause of the accident was that the pilot attempted to take-off from an area that was unsuitable for the purpose.

Approved for publication	<i>S. J. Hughes</i> Delegate of the Secretary	Date	19.8.80
--------------------------	--	------	---------

## DEFINITIONS

**ACCIDENT -** An occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight until such time as all those persons have disembarked and in which

- (a) any person suffers death or serious injury as a result of being in or upon the aircraft or by direct contact with the aircraft or anything attached to the aircraft; or

Note. - Specifically excluded are: death from natural causes and fatal or serious injury to any person on board whether self-inflicted or inflicted by another person, or to ground support personnel before or after flight, or fatal or serious injury which is not a direct result of the operation of the aircraft, or which concerns stowaways.

- (b) the aircraft suffers substantial damage or is destroyed; or
- (c) the aircraft is missing or is completely inaccessible.

**FATAL INJURY -** Any injury which results in death within 30 days.

**SERIOUS INJURY -** Any injury other than a fatal injury which

- (a) requires hospitalisation for more than 48 hours, commencing within seven days from the date the injury was received; or
- (b) results in a fracture of any bone (except simple fractures of fingers, toes or nose); or
- (c) involves lacerations which cause severe haemorrhages, nerve, muscle or tendon damage; or
- (d) involves injury to any internal organ; or
- (e) involves second or third degree burns, or any burns affecting more than five percent of the body surface.

**MINOR INJURY -** Any injury other than as defined under "Fatal Injury" or "Serious Injury".

**DESTROYED -** Consumed by fire, demolished or damaged beyond repair.

**SUBSTANTIAL DAMAGE -** Damage or structural failure which adversely affects the structural strength, performance or flight characteristics of the aircraft and which would normally require major repair or replacement of the affected component. The following types of damage are specifically excluded: engine failure; damage limited to an engine or its accessories, or to propeller blades; bent fairings or cowlings; small dents or puncture holes in the skin; damage to wing tips, antennas, tires, or brakes.

**MINOR DAMAGE -** Damage other than as defined under "Destroyed" or "Substantial Damage".