

**Aviation Safety Investigation Report
198900010**

Mooney M20J

18 June 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: 198900010
Location: Rutherford NSW
Date: 18 June 1989
Highest Injury Level: Fatal
Injuries:

Occurrence Type: Accident

Time: 1202

	Fatal	Serious	Minor	None
Crew	1	0	0	0
Ground	0	0	0	-
Passenger	1	0	0	0
Total	2	0	0	0

Aircraft Details: Mooney M20J
Registration: VH-WCK
Serial Number: 24-0830
Operation Type: Private
Damage Level: Destroyed
Departure Point: Bankstown NSW
Departure Time: 1130 approx.
Destination: Maitland NSW

Approved for Release: 27th February 1990

Circumstances:

The pilot had recently been endorsed to fly, "Retractable Undercarriage" and "Constant Speed Propeller" aircraft, and had accumulated six hours on this aircraft type. When the aircraft arrived in the circuit area the wind was westerly at 10-15 knots gusting to 20 knots. The pilot elected to conduct an approach to runway 23, although an into wind runway was available. The reason for this decision was not established. The pilot carried out a go-around from his initial approach. Following the second approach to the same runway the aircraft touched down heavily. Structural damage to the aircraft was sustained, with the left main landing gear door and retraction rod-end bearing being detached from the aircraft. After bouncing on the runway the aircraft became airborne again, and with the landing gear down and hanging free, it was observed to commence another left hand circuit. At an estimated height of 200-300ft, the aircraft turned onto a low level downwind leg with an increasing nose high attitude. The aircraft was then observed to roll into a spiral dive manoeuvre from which it failed to recover. The on-site investigation revealed that the aircraft had impacted soft waterlogged ground, outside the aerodrome boundary, in a near vertical attitude. Rear fuselage distortion was consistent with the aircraft having been rolling about the longitudinal axis at the time of impact. Ground impact had reduced the cockpit area to non-survivable dimensions. The engine and propeller, which were buried in the soft ground beneath the cockpit area, showed no evidence to indicate that the propeller had struck the ground during the heavy landing on the runway. Inspection of the aircraft failed to find any pre-existing defects or abnormalities which were contributory to this accident. Flight test evaluation of the stall characteristics of this model aircraft has indicated that it only marginally achieves the certification requirements, and is difficult to control in all but ideal stall conditions. It is considered probable that the attention of the pilot was diverted from the operation of the aircraft due to the failure of the landing gear to retract and the cockpit workload and associated anxiety following the heavy landing. Medical evidence indicated that both occupants had been holding their respective control columns at the time of impact. What effect this may have had on the development of

the accident was not established. The reason why the aircraft entered an abnormal flight manoeuvre at an altitude from which the pilot was unable to recover could not be determined.

Significant Factors:

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

1. The pilot elected to carry out an approach in gusty crosswind conditions when a more suitable runway was available.
2. The pilot did not maintain a stabilized approach to land, possibly because of the turbulent conditions and/or his lack of familiarity with the aircraft.
3. Heavy landing.
4. Following the heavy landing the pilot encountered unforeseen circumstances beyond his capability.
5. The pilot's attention was probably distracted from the operation of the aircraft.
6. Loss of control with insufficient height to effect a recovery.
7. Possible inadequate training on the specific aircraft type, particularly with regard to slow speed handling and stalling characteristics.

Recommendations:

1. That the Civil Aviation Authority consider removing this model aircraft from the group endorsement for single engine, retractable undercarriage and constant speed aircraft in favour of a specific endorsement which requires additional flying training in stall and spin recovery techniques.
2. That the Civil Aviation Authority provide the industry with advisory information concerning stall warning strips and switches, their positioning, flight testing and procedures for setting and adjusting.