



COMMONWEALTH OF AUSTRALIA

DEPARTMENT OF TRANSPORT

AIRCRAFT ACCIDENT INVESTIGATION SUMMARY REPORT

Reference No.

SI/783/1016

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

1. LOCATION OF OCCURRENCE

2 Kilometres north-east of Melbourne Airport, Victoria	Height a.m.s.l. 520 feet	Date 30.3.78	Time (Local) 0145 hours	Zone EST
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2. THE AIRCRAFT

Make and Model Piper PA31/350	Registration VH-MBK	Certificate of Airworthiness Valid from 25.3.77
Certificate of Registration issued to	Operator	Degree of damage to aircraft Destroyed
		Other property damaged Nil
Defects discovered Damaged No. 2 piston and piston rings of right engine.		

3. THE FLIGHT

Last or intended departure point Melbourne Airport	Time of departure 0144 hours	Next point of intended landing Canberra	Purpose of flight Carriage of freight	Class of operation Charter
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4. THE CREW

Name	Status	Age	Class of licence	Hours on type	Total hours	Degree of injury
	Pilot	44	Commercial	1531	13017	Fatal

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

Name	Status	Degree of injury	Name	Status	Degree of injury

6. RELEVANT EVENTS

The aircraft was based at Moorabbin Airport and, late in the afternoon of 29.3.78, it was refuelled and a pre-flight inspection was carried out. The pilot ferried it to Melbourne Airport just after midnight. While he was preparing and submitting a flight plan for the flight to Canberra and return, the aircraft was loaded with newspapers and a small quantity of other freight. On returning to the aircraft, the pilot checked the loading documents and the freight and made a walk around inspection of the exterior of the aircraft.

The pilot started the aircraft engines and established radio communication with air traffic control at 0139 hours. He was given a taxi clearance and an airways clearance for departure from runway 34. Upon request, he was granted approval to commence take-off from the taxiway "J" intersection, some 800 metres from the southern end of the runway. He reported "ready" at 0143 hours and was immediately given a clearance for take-off. The aircraft commenced to take-off, became airborne and, when it was at a height of 100 to 200 feet above the intersection of the two runways, the pilot advised "got a fire - fire in the ah starboard engine and ah doing a low circuit request two seven". Air traffic control immediately replied "make visual approach runway two seven clear to land". Acknowledgement of this clearance was the last communication received from the aircraft. As the aircraft passed over the northern end of runway 34 it commenced a turn to the right and gradually descended. It struck the ground in a right wing down attitude on a track of 070° magnetic and an intense fire broke out. The accident site was 1.8 kilometres to the north-east, and 88 feet above the elevation, of the northern end of runway 34.

At the time of the accident the surface wind was 330°/9 knots, the visibility was 25 km in passing showers, there was 3 oktas stratus cloud base 1800 feet and 6 oktas cumulus cloud base 3500 feet. It is probable that below 1000 feet there was some wind shear, downdrafts from passing showers and intermittent moderate turbulence.

It has been calculated that the gross weight of the aircraft was some 65 kilograms in excess of the maximum take-off weight and the centre of gravity was within limits.

A detailed examination of the wreckage of the aircraft revealed that the landing gear and flaps were fully retracted, the cowl flaps of both engines were midway between the open and closed positions,

6. Relevant Events (cont')

a considerable degree of nose left rudder trim was selected, the right engine was closed down and the propeller feathered.

It was established that, as a result of excessively lean mixture operation, there was a hole burned through the piston rings and into the side of the No. 2 piston of the right engine. There was no evidence of fire within the engine but it was apparent that the hole in the piston had resulted in pressurisation of the crankcase cavity, ejection of the oil dipstick and the consequent venting of oil from the dipstick orifice and the engine breather pipe on to the exterior of the exhaust pipes. The engine had the capacity to continue to produce a substantial amount of power for a limited period.

The turbo-charger density controller of the left engine was found to be incorrectly adjusted to the extent that the engine could develop only about 330 BHP instead of 350 BHP of which it was normally capable.

7. OPINION AS TO CAUSE

The probable cause of the accident was that, believing there was an internal fire in the right engine, the pilot closed the engine down in circumstances where the single-engine performance capability of the aircraft proved to be insufficient to sustain continued flight.

Approved for publication	<i>G.V. Hughes</i> (G.V. Hughes) Delegate of the Secretary	Date 9.3.1979
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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".