

1. LOCATION OF OCCURRENCE

Gladstone Airport, Queensland	Height a.m.s.l. (ft) 48 feet	Date 30.10.69	Time (Local) 1330	Zone EST
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2. THE AIRCRAFT

Make and Model Sikorsky S58B/A1 Helicopter	Registration VH-UTF
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3. CONCLUSIONS

At approximately 1330 hours on 30th October, 1969, a Sikorsky S58B/A1 helicopter registered VH-UTF was virtually destroyed by fire following the development of ground resonance during a forced landing shortly after lift off at Gladstone Airport, Queensland.

(ii) The aircraft was owned and operated by Helicopter Utilities Pty. Ltd. of Sydney and, at the time of the accident, it was engaged on a charter flight from Gladstone to Heron Island, with twelve passengers on board.

(iii) The pilot and cabin attendant were not injured but one of the passengers was seriously injured and two passengers suffered minor injuries.

(iv) The aircraft was destroyed by fire. Some damage occurred to the surface of the airport apron as the result of fire.

(v) The pilot, William Gerald Mayo, was 48 years of age, and was the holder of a valid Commercial Helicopter Pilot Licence endorsed for the aircraft type. His total flying experience amounted to 15,600 hours of which 10,600 hours had been flown on helicopters including 1000 hours on the S58 type of helicopter.

(vi) There was a current certificate of airworthiness for the aircraft, and examination of the aircraft maintenance records indicated that the aircraft had been properly maintained.

(vii) Examination of the wreckage did not reveal any defect or malfunction which could have contributed to the accident, but the examination was severely hampered by the extent of destruction by fire.

(viii) There was a loss of engine power shortly after lift off and there is evidence of some fluctuation in the engine fuel pressure, but it was not possible to establish the extent of the power loss nor the cause of the malfunction.

(ix) The aircraft sustained substantial damage whilst affected by ground resonance. It was then virtually destroyed by an intense fire which resulted when fuel was discharged onto the ground as a result of the aircraft fuel system being ruptured.

(x) On the available evidence, the aircraft load was within permissible limits.

(xi) The weather was fine with a wind from the north at 12 knots, unrestricted visibility and an air temperature of 80 degrees Fahrenheit.

(xii) The passengers to be carried to Heron Island on VH-UTF presented themselves at the terminal at Gladstone Airport and, following weighing formalities, were ushered to the aircraft under the supervision of the cabin attendant. The pilot started the aircraft engine and carried out engine serviceability checks while the passengers were issued with life jackets by the cabin attendant and then took their seats.

CONCLUSIONS (Cont'd)

(xiii) Before the take-off was commenced, the passengers were not briefed in a manner satisfying the total applicable requirements of A.N.O. 20.11 Section 15.

(xiv) Following a signal from the cabin attendant that all was ready for take-off, the pilot applied power and lifted the helicopter into hover. After a momentary check of power and trim the pilot began to move the aircraft forward along the line of the taxiway towards the runway. At a height of less than 10 feet and with a forward speed of some 5 knots the aircraft engine coughed and lost power. The pilot noticed a drop and fluctuation in engine fuel pressure and the fuel booster pump low pressure warning light illuminated. He reduced power and landed and as the aircraft touched and rolled forward, ground resonance commenced. The pilot endeavoured to lift the helicopter back into the air in order to terminate the ground resonance, but this was unsuccessful owing to the lack of engine power. The severe rocking motion, as ground resonance developed, bounced the aircraft to the left and the pilot then applied the rotor brake. The main rotor blades struck the ground, the undercarriage failed and the helicopter came to rest having rotated more than 180 degrees from its original heading. The pilot carried out an engine shut down check and he vacated the aircraft through the right hand cockpit window. All the other occupants vacated the aircraft through the main cabin door under the direction of the cabin attendant. Fuel was seen to be pouring from the lower forward section of the fuselage and this ignited whilst the passengers were still evacuating the cabin, forcing the last persons out to leap through the flames.

(xv) In this type of aircraft, should ground resonance occur at high RPM, the corrective action is for the pilot to increase power and take off. The ground resonance will cease when the aircraft is clear of the ground. Should ground resonance occur at low RPM, the rotor RPM should be immediately reduced further by decreasing throttle and the rotor and wheel brakes should be applied.

4. OPINION AS TO CAUSE

The probable cause of the accident was that, following a loss of power at low altitude, the aircraft developed ground resonance in circumstances which prejudiced the pilot's ability to effect recovery.

Release approved

D. S. Graham
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Designation

Assistant Director-General
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Date

18. 8. 70