

No. 9

Indian Airlines Corporation, DC-3 (C-54B) Skymaster, VT-DIC accident near Haveri (Mysore State), India on 7 May 1962. Report No. 1/19/62 Acc. dated 4 July 1962 released by the Office of the Director General of Civil Aviation, India.

1. Historical1.1 Circumstances

Flight 106 departed from HAL Airport, Bangalore for Bombay at 1555 hours Indian standard time on a scheduled domestic flight with 6 crew members and 30 passengers on board. After a normal take-off and climb, the aircraft was cruising at flight level 85 with the engines operating at 29" manifold pressure and 2050 rpm. BMEP gauges were not fitted. At 1630 hours the flight reported its position 100 miles out from Bangalore and estimated Bombay FIR boundary at 1700 hours. The flight was uneventful up to about 1650 hours when the pilot heard a loud "thud" which he believed to be an engine misfiring. This was followed by the aircraft losing height rapidly. The auto pilot was disengaged and the aircraft was trimmed for manual flight. In order to maintain height the pilot applied climb power, and then METO power by moving the pitch and throttle controls forward, and although the manifold pressure increased first to 35" and then to 40", the engine speed remained constant at 2050 rpm and the aircraft continued to lose height at a descent rate of 1 500 feet per minute. Cylinder head temperatures were not apparently noted. The pilot eventually made a wheels-up landing in a ploughed field at an elevation of 1 900 ft. The accident occurred at approximately 1655 hours.

1.2 Damage to aircraft

The aircraft sustained substantial damage to propellers, engine cowlings, inboard nacelles, the centre section and centre section spar and the main fuselage.

1.3 Injuries to persons

Two crew and two passengers sustained minor injuries.

2. Facts ascertained by the Inquiry2.1 Aircraft information

The certificate of airworthiness was valid until 8 January 1963. The aircraft and engines had a trip certificate issued by a licensed maintenance engineer dated 5 May, valid for 5 days or 40 hours flying. The aircraft had completed 26 hours 15 minutes since the issue of the trip certificate.

The weight of the aircraft at take-off was well below the permissible limit.

2.2 Crew information

The pilot-in-command, age 41 years, held a "B" licence endorsed for DC-4 aircraft valid to 20 August 1962 and had 12 777 hours 30 minutes flying experience of which 1 806 hours 10 minutes were on DC-4 aircraft. He had flown 85 hours 45 minutes during the preceding month.

The co-pilot, age 48 years, held a "B" licence endorsed for DC-4 aircraft valid to 26 September 1962 and had 13 499 hours 35 minutes flying experience of which 2 896 hours 20 minutes were on DC-4 aircraft. He had flown 53 hours 5 minutes during the preceding month.

The radio officer held a flight radio operator's licence valid to 26 February 1963.

The flight engineer held a permit valid to 3 December 1962 and had 5 573 hours 25 minutes flying experience.

2.3 Weather information

At the time of the accident the aircraft was flying in the vicinity of a thunder-storm, however, the weather was not considered to be a factor contributing to the accident.

2.4 Navigational aids

N/A

2.5 Communications

Radio communications were normal until the time of the accident.

2.6 Aerodrome installations

N/A

2.7 Fire

No fire occurred.

2.8 Wreckage

Examination of the wreckage revealed 1 000 U. S. gallons of fuel remained evenly distributed in the four tanks and the fuel selectors indicated each engine was receiving fuel from its respective tank. All the carburettors contained fuel. The quantity of oil in the engine tanks was normal and there were no leaks. The oil pressure filters were free from metal and the engines rotated freely. The continuity and insulation of the ignition system LT and HT circuits were found satisfactory and the contact breaker points were found to be set correctly. The spark plugs were removed and found to be in a wet and oily condition. The engine and flight controls showed no sign of malfunction, and no sign of structural damage or failure prior to the emergency landing was found.

3. Comments, findings and recommendations

3.1 Discussion of the evidence and conclusions

The position of the fuel tank selectors and the fact that fuel was found in all carburettors eliminated the possibility of a defect in the fuel system. Detailed examination of the ignition system showed no defects, nevertheless, the simultaneous complete loss of power of the four engines was evidently due to ignition failure and this was confirmed by the condition of the spark plugs. Inspection of the ignition switch installed revealed no operational defect, however the master ignition dual switches (Type B- 5) were interconnected by a U-shaped handle which permitted the operation of all ignition switches simultaneously. The sudden switching off of the ignition to the engines developing cruising power and the possible resultant momentary misfiring would be felt and described as a "thud". All indications pointed to the probability that the interconnecting master switches' U handle was mistakenly moved to the off position by someone and this resulted in the inadvertent switching off of the four engines. The switching off of the engines was not suspected as the crew misinterpreted the engine instruments to indicate that power was being developed.

3.2 Probable cause

The accident was attributed to the failure of the crew to diagnose complete loss of power caused by an inadvertent movement of the master ignition switch to the "off" position during flight.

3.3 Recommendations

N/A

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