

No. 34

Cambrian Airways Limited, Dove DH 104 Series 1B, G-AKSK, crashed at Sloden Enclosure, New Forest, 1 1/2 miles west of Fritham, Hants., on 23 July 1955. Ministry of Transport and Civil Aviation (U.K.) Aviation Accident Report No. C636

Circumstances

Before leaving Cardiff (Rhoose) Airport the pilot filed a Visual Flight Rules flight plan giving an elapsed time of 35 minutes for the flight to Eastleigh Airport, Southampton at a cruising altitude of 5 500 feet and then on to Paris. The aircraft took off at 0825 hours Greenwich Mean Time carrying the pilot and 6 passengers. At approximately 0850 hours he called London, asked for clearance to Southampton Zone and was told to call Southampton Zone. He then acknowledged this request. Shortly after 0850 the engines became unsynchronised and the aircraft vibrated. The port propeller stopped rotating and the aircraft lost height. On reaching 200 feet the port engine was restarted and the aircraft flew very low over a line of high tension cables. It continued to fly at 200 feet at low speed with increased vibration over undulating country and after climbing slightly to clear a ridge it descended into a densely wooded area. When near the tree tops it banked to the left and the port wing tip struck a tree. The aircraft then travelled 400 yards further, struck the tops of several trees and crashed, killing the pilot and seriously injuring 4 passengers.

Investigation and Evidence

Inspection at the scene of the accident showed that the aircraft had crashed into a dense wood after striking the tops of tall oak trees. The port wing tip was the first part to become detached and was found 400 yards from the main wreckage. The cockpit was crushed and the passenger compartment had been ripped open. The starboard engine had been torn out of its mounting and was lying about 15 yards from the fuselage. The port engine remained in its mounting. Both propellers were attached to their respective engines but only the port propeller showed evidence of being under power on impact. There was no evidence of fire. The inertia switch of the fire extinguishing system had operated but the methyl-bromide bottles had not discharged electrically due to disruption of the electrical circuits during the crash.

The engines were salvaged and sent to the manufacturers for detailed examination. After replacing certain components which had been damaged in the crash the port engine was mounted in a test bed and given a thorough testing. Subsequently it was stripped for detailed examination. The results of the test and strip examination showed that the engine was in sound working order.

The starboard engine had sustained considerable impact damage. When dismantled it was found that the crankshaft had broken at No. 3 crankpin. This failure had occurred before the crash as a result of a fatigue crack which had developed at a plugged hole in the rear web of No. 3 crankpin. Heavy scoring on the faces of the crankcase web and cap of No. 1 main bearing showed that Nos. 1 and 2 cylinders continued working after the crankshaft had failed. The crankshaft had run for a total of 1 205 hours since manufacture including 619 hours since the last overhaul when a modification designed to prevent failures of this nature was embodied.

Both propellers were subjected to a strip examination, including the units connected with the system for feathering the starboard propeller, but no evidence of any pre-crash defect was found. The blades of both propellers were in fine pitch.

This is the second accident to a Dove aircraft within one month in which the pilot shut down the port engine instead of the starboard engine which had developed serious mechanical trouble.

In both accidents the pilots were experienced and had completed over 500 hours flying as pilot-in-command in the type. Three factors which might possibly give rise to this kind of mistake were suggested in the report on the first accident (H.M.S.O. ref. C.A.P. 133). Only one of these factors is, however, common to both accidents, namely, the combined oil pressure/temperature gauge. This

instrument is duplicated, one for each engine, and normally mounted side by side. Each instrument is marked "OIL" at the top centre and although annotated "LB/□" and "OC" respectively at the bottom the marking of adjacent pressure and temperature scales are not dissimilar. A fall in oil pressure in the starboard engine would be recorded by the left-hand pointer of the starboard gauge. It is possible that a pilot seeing the left-hand pointer of the starboard gauge falling could, in the stress of the moment, associate "left" with "port" and in consequence shut down the sound port engine instead of the failing starboard engine.

In the subject accident the pilot appears to have realised his mistake and restarted the

port engine. Unfortunately, by this time the aircraft was down to a very low altitude. Even then, had the starboard engine been shut down and its propeller feathered, the accident might have been avoided. Why this was not done could not be determined.

Probable Cause

The accident was the result of the pilot mistakenly shutting down the port engine instead of the starboard engine in which a serious mechanical fault had developed. This led to a rapid loss of height and although the pilot restarted the port engine the starboard engine was not shut down.
