No. 9

IBERIA, Douglas DC-3, EC-ACH, caught fire and crashed in the vicinity of "La Marañosa" Getafe (Madrid), Spain, on 28 October 1957. Report released by the Directorate General of Civil Aviation, Spain.

Circumstances

EC-ACH was on a scheduled passenger transport flight from Tangier to Madrid carrying 4 crew and 17 passengers. When flying near Getafe it caught fire after an intense flare of light was seen, and the left engine fell free. The aircraft then lost height and crashed, killing all occupants.

Investigation and Evidence

Witnesses' statements showed that in its first stage the fire was set off by a magnesium compound or by a thermic-type mixture and not by liquid fuel, while in the second stage the burning of fuel with a high carbon content became apparent.

Examination of the wreckage showed that the fire started behind the fireproof bulkhead; the spar supporting the upper engine fittings gave way owing to the heat, and the engine rested on the lower fittings until they broke.

The aircraft hit the ground with its landing gear extended. The leading edge of the left wing in the de-icing zone was burned by a jet of flame which reached a temperature of over 800° C which had been directed during flight from the nacelle toward the wing and from the rear to the front.

It appears that the aircraft was flying normally when fire broke out in the left nacelle behind the fireproof bulkhead and spread rapidly, either because the pilot extended the gear to begin landing operations or else because the fire reached the oil container, raising the temperature sharply and probably setting off the fire detection system.

The temperature attained weakened the spar supporting the upper engine fittings as well as the lateral walls of the nacelle; the engine became loose and was supported only by the lower fittings whose bolts could not support its weight. The engine was, therefore, soon torn away. This could have occurred at 1804 hours at the latest - by which time the aircraft was no longer replying to R/T calls.

The oil and hydraulic lines, as well as the rest of the oil in the container fed the fire, and when the engine became detached taking with it a piece of the fireproof bulkhead, a direct current of air fanned the flames which spread to the left wing and the left side of the fuselage, reaching the rudder and the left elevator.

It is probable that in order to open the passenger door, in accordance with emergency regulations, and since the door handle must have been very hot, a water-soaked napkin was used; it was, subsequently, found near the engine. It is also probable that emergency exits were opened to permit rapid evacuation of the aircraft once it landed. However, before it reached the ground, fire must have entered the cabin by any one of these openings, as is shown by the evidence of intense fire in the interior of that part of the tail unit that was not totally destroyed. It may also have happened that the left side of the baggage compartment caught fire owing to the intense heat produced by the flames.

With fire inside the cabin, or at least in the baggage compartment, the aircraft attempted to land with its trimming tabs operated to their limit. It was, however, listing badly owing to the missing engine, probably aggravated by the fact that passengers on the port side had gone over to starboard in an attempt to escape the heat generated by the fire. Moreover, the landing gear could not be locked in place - the failure of hydraulic pressure prevented its retraction or its locking in an extended position.

The Flight

At 1759 hours the aircraft was in contact with Barajas Control Tower and reported normal flight and that the airport was in sight. It requested landing data and asked that the ILS be turned on to test the airborne installation in the prevailing visual meteorological conditions. Barajas replied: "Runway 33, wind calm, QNH 30.13, report on reaching base leg, ILS out of order". At 1803 the aircraft called the Paracuellos Area Control Centre asking for emergency entry clearance as its left engine was on fire. It was given absolute priority for the use of any runway. That was the last contact with the aircraft. Shortly thereafter an engine fell clear, and 30 seconds later an intense light was seen caused by a fire accompanied by columns of black smoke. After making a turn the aircraft began to lose height rapidly and fell to the ground.

Probable Cause

The accident was caused by a fire produced by extraneous objects, which developed in the left nacelle. A different type of fire would have burned the wheel, the magneto couplings and the landing gear leg; fuel combustion alone would not have been sufficient to weaken so rapidly the engine support fittings.

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Scheduled
En route
Fire in flight