No. 46

AIR INDIA DC-3 Aircraft crashed a few minutes after take-off from Palam Airport on 9 May 1953. Government of India Report

Circumstances

The aircraft, engaged in a scheduled night air service Delhi-Ahmedabad-Bombay, took off at approximately 0123 hours on 9 May 1953 with 5 crew and 13 passengers on board.

At 0128 a large fire was observed a short distance from the aerodrome. The wreckage of the aircraft was located scattered over an area approximately 1-1/3 miles southeast of the airport. There were no survivors.

Investigation and Evidence

There were three pilots in the crew; Captain, First Officer and a supernumerary pilot who obtained the Communication Navigational, Meteorological and Air Traffic Control briefing and clearance at Palam before the flight. The weather conditions were good, with visibility steady at 4 nautical miles and surface wind less than 10 knots.

The aircraft proceeded to the end of runway 09. At 0122 hours the aircraft contacted Air Traffic Control, Palam, on radio telephony and requested permission to take-off. Permission was granted and the aircraft took off immediately. At 0125 hours, after the aircraft had taken off and was airborne, Air Traffic Control, Palam, received on radio telephony a request from the aircraft for permission to execute a starboard turn and change over to Safdarjung Approach Control. The permission was granted and acknowledged.

Thereafter there was no contact between the aircraft and Palam Air Traffic Control. At, or immediately after, 0126 hours Palam Air Traffic Control attempted to establish contact with the aircraft by calling it on radio telephony four times but no reply was received. The Duty Officer at Approach Control at Safdarjung, who was informed by Air Traffic Control, Palam, shortly before 0126 hours that the aircraft had taken off, started calling the aircraft immediately after 0126 hours on Approach Control frequencies but could not get any response.

At 0128 hours the Palam Control Tower was lighted with a glow. The officers on duty looked out and saw clouds of smoke and a huge fire burning a little distance away. The crash siren was sounded and rescue services were put into operation.

The aircraft was last seen flying by an eye witness just about 30 seconds before it crashed. At that time the aircraft was stated to be at a height of about 400 to 500 feet and was turning round at a rather steep bank with its right wing down. There was nothing else that the eye witness considered unusual with regard to its flight at that moment.

The aircraft had sufficient fuel on board, no mechanical trouble or snag was detected during inspection of the aircraft before it took off; there was no report of any irregularity or emergency from the pilot due to malfunctioning of the aircraft;there was no mechanical interruption to the flight and the meteorological conditions were fair.

The Inquiry considered various factors as possible causes of the accident as follows: Operational safety of Dakota aircraft, structural failure, engine failure, damage during storm, caged artificial horizon, cockpit failure, auto pilot in 'on' position, faulty loading, fire, lightning, hitting an object in the air, shortage of fuel, intoxication of the members of the crew, sabotage, locked ailerons, crew fatigue, sensory illusion, pilot's error or judgment.

Except for the last, all these factors were rejected, there being no evidence that they were contributory causes.

However, with regard to pilot's error or judgment, the Inquiry considered an important piece of evidence.

At the time of the departure of the aircraft, the supernumerary pilot was seen occupying the First Officer's seat, whereas the crew member who was scheduled to fly as First Officer,

was observed standing behind the pilot's seat. This fact was brought out in the evidence of a Traffic Assistant of Air India Ltd., who was in charge of loading and was present near the aircraft at the time of its departure. From amongst the other employees of Air India who were examined by the Court, no one could either corroborate or deny the fact of having seen the supernumerary pilot in the First Officer's seat. This may be attributed to their lack of observation.

The Inquiry accepted the evidence because undoubtedly it was the supernumerary pilot, who went for communication, navigational, meteorological and air traffic control briefing. According to the instructions given in Notices to Airmen, issued by the Director General of Civil Aviation and also in accordance with the Company's regulation., all briefing should be received personally by the Captain of the aircraft. Neither the Commander of the aircraft, nor the First Officer obtained the briefing personally.

The supernumerary pilot, although an experienced pilot with his licence endorsed for Viking aircraft, had only an hour's experience on a Dakota and that was during a day flight. He was neither competent to fly a Dakota aircraft nor scheduled to do so. The fact that he was occupying the First Officer's seat and went for all the briefing shows that the Captain's intention was that the supernumerary pilot should be permitted to fly the aircraft. It appears probable that the Captain after the take-off, when the aircraft had become airborne and reached a height of about 400 to 500 feet, let the supernumerary pilot take over the controls.

For the reason stated above, it seemed likely that it was the supernumerary pilot who was operating the controls shortly before and during the execution of the starboard turn.

It was the conclusion of the Inquiry that inexperience with Dakota type of aircraft had much to do with this unfortunate disaster. An important piece of evidence is the testimony of a witness who saw the aircraft, about 30 seconds before the crash, turning at a steep bank of about 45 degrees with its right wing down. He observed the aircraft for a few seconds and saw it gradually go lower and lower at the same angle.

There is, therefore, every reason to believe that having gone into a very steep starboard turn and being unfamiliar with the type of aircraft he was flying, the supernumerary pilot was not able to come out of the overbanked turn in time because of the low altitude. The Captain sitting by his side was unable to take corrective action or, if he attempted to do so at the last moment, was too late for it. The aircraft could not have been at a height of more than approximately 500 feet. The elevation at the scene of the wreckage is about 45 feet above the Palam level. Thus, with only about 450 feet or perhaps less, between the aircraft and the ground, it should not have taken more than a few seconds for the aircraft to collide with the ground.

Recommendations

With a view to the preservation of life and the avoidance of accidents in future, the Court of Inquiry made the following recommendations:

a) The existing rule that unlicensed personnel should not fly the aircraft should be strictly enforced and any one acting in contravention or in abetting thereof should be dealt with severely.

b) Although satisfied in this case that the crew took no alcoholic drink, provision should be made in the Indian Aircraft Rules that none of the operating crew of an aircraft have any alcoholic or intoxicating drink, sedative, narcotic or stimulant drug or preparation within twelve hours of the commencement of the flight or during the flight.

c) The existing regulations, that the captain of the aircraft (or the flight despatcher where a company employs such an officer) should obtain briefing personally, should be strictly enforced.

d) The briefing should be given to the members of the crew personally by the competent officers.

e) A senior officer of the operator should be present at the time of departure of a scheduled service from a terminal station, to ensure that both the engineering and operational staff of the operator carry out their respective duties in accordance with the regulations and procedures laid down.

f) The Proficiency or Instrument and Route checks of pilots should be carried out frequently by Government Check Pilots. The number of Government Check Pilots should be increased to enable them to cope with the thorough and frequent checks of pilots.

g) Co-pilots should receive an Instrument or Proficiency check once a year. New Captains, that is, those with less than one year's service as commander should be given a Proficiency or Instrument check at frequent intervals, roughly every quarter. In the case of Captains with over one year's service as pilot-in-command, proficiency and Instrument Checks may be less frequent, say once every six months. The procedure of checking to be followed for these checks may be laid down by the Civil Aviation Administration.

h) The Check Pilots appointed by the Government should be qualified, experienced and competent to fly the type of aircraft on which the check is to be carried out. They should themselves be subjected to checks at least once a year by independent and competent Check Pilots.

i) It should be ensured that proper use is made of cockpit check lists by the pilots. A pilot should not be permitted to rely on his memory rather than the cockpit check lists. These lists should be as detailed and thorough as possible and should include all critical items and emergency procedures. Disciplinary action should be taken against pilots not making proper use of cockpit check lists.

j) Adequate link training equipment and a sufficient number of instructors should be made available in India for airline pilot training. The cost of training during the course of an actual flight has, at times, proved to be a deterring factor and considering the reduced cost in link training, its provision will encourage airlines to devote greater attention to increasing pilot proficiency.

k) Uniform standards and procedures of training should be maintained in respect of civil aviation personnel throughout the country. Therefore, the Directorate of Training of the Civil Aviation Department should be strengthened along the latest trends that obtain in other parts of the world.

l) Standards and Recommended Practices of the International Civil Aviation Organization relating to Personnel Licensing, as laid down in Annex I to the Convention on International Civil Aviation should be implemented by India.

m) Every opportunity should be utilized to send officers abroad for training and familiarization of the techniques, procedures and standards which prevail in other countries. Opportunities for training in the International Civil Aviation Organization and such other organization should also be explored.

n) The Accident Investigation Branch of the Civil Aviation Department should be strengthened to enable them to initiate a thorough study and detailed analysis of causes of accidents which occur in India and other parts of the world.

o) A provision should be made to ensure that the Certificate of Safety for Flight issued by an Aircraft Maintenance Engineer of the operators should be handed by him personally to the pilot.

Probable Cause

The probable cause was an error of judgment on the part of the supernumerary pilot, flying as First Officer, who executed a steep starboard turn and could not come out of the overbanked turn in time because of the low altitude.

Inexperience of the pilot with the type of the aircraft which he was flying is deemed to be an indirect cause of the accident.