

No. 14

Société Aérienne de Transports Tropicaux, Lockheed 60
crashed during take-off by night, at Gao, Niger, on 24 March 1952

Circumstances

The aircraft took off from Gao at night at 0307 hours on 24 March 1952 with eighteen passengers and three crew. The take-off was normal and the aircraft rose to an altitude of about 10 metres. The navigation lights were then seen to fade gradually and to disappear in a depression beyond the runway, and shortly afterwards, flashes from a fire were seen and the alarm given. The aircraft collided with the ground after take-off completely destroying the aircraft. Fourteen passengers and three crew were killed and two passengers injured.

Investigation and Evidence

The flight, non-scheduled, was a Nice-Abidjan round trip and departed from Nice on 21 March 1952. It stopped at Algiers, El Golia and Tamanrasset where the night was spent. On the following day the aircraft arrived at Abidjan via Gao and Ouagadougou. The following morning the aircraft left Abidjan on its return flight, a night stop being scheduled at Tamanrasset. However, the flight was behind schedule and in view of the fact that Tamanrasset was not provided with night markings, the pilot decided to spend the night at Gao and leave the following morning at about 0900 hours. He mentioned also that he was tired. Later that evening word was received from the company which caused the pilot to change his plans and decide to leave at 0300.

On arrival at the meteorological office for preparation of the pre-flight plan, the pilot, during a conversation with the air traffic controller, complained that he was very tired and mentioned that the Gao-Nice flight would have to be made with only short stops on the way and that he had to fly in an aircraft not equipped with an automatic pilot and in which he was also required to perform the duties of navigator. He seemed to dread the take-off at night very much and went so far as to ask the controller to prohibit him from taking off. The controller could not comply with such a request, as the flight planned was normal from the regulation point of view.

The weather at the time of the accident was, clear sky, very black night with slightly misty horizon (visibility 8-10 kms.), the air was calm and surface temperature 22°.

After taxiing to the end of the runway, the engines were run up for about seven or eight minutes and, after receiving clearance, the aircraft took off after a run of about 900 metres. The landing lights were not used on take-off.

In the direction of take-off the aerodrome is about ten metres above the surrounding plain. At the end of the runway there is a sharp drop and the take-off path is therefore completely clear of any obstructions. The plain, stretching to the horizon, is absolutely flat except for minor rolls which never exceed a height of one metre.

According to the surviving passengers, who were seated at the rear of the aircraft, after a flight of about fifteen or twenty seconds a series of shocks, mild at first becoming progressively more violent, gave the impression that the aircraft was running over uneven ground.

The wreckage of the aircraft was located approximately 2 km. beyond the cliff, very nearly on the extended centre line of the runway. The first contact with the ground occurred at 1 500 metres from the end of the runway and approximately on its centre line, the first contacts being made with the propellers followed by the underside of the fuselage at a flat angle and at high speed.

It was established that engine or airframe failure did not occur and that the pilot was in full control of the aircraft and not anticipating contact with the ground.

During the course of a flight on the aircraft of the Aéro-Africaine, the pilot-in-command is required to fulfill several duties.

As pilot, he performs the usual technical duties at stop-overs (flight plan, etc.) and during the flight, he remains constantly at the controls of a naturally unstable aircraft which is not equipped with an automatic pilot.

As navigator, he controls the course of the aircraft over routes where ground services are scarce and where it is important not to depart from the initially determined route (Sahara).

As representative of the airline, he must see to the accommodation of the passengers during stops at isolated aerodromes where the possibilities are limited.

Moreover, the crew have to withstand the effects of repeated climatic changes of flights in rough atmosphere during the hours of maximum heat in tropical regions, and to cope with high temperatures which make rest at stop-overs inadequate.

To sum up, it may be assumed that a Nice-French Equatorial and Africa return trip, without protracted stop-overs, and at the rate of two flights of three hours each, per day, does not exceed the capabilities of a normal crew. However, when changes of schedule or difficulties causing the individual flights to be lengthened arise, the effort required is considerable, and the ensuing fatigue can have a detrimental effect on the efficiency of the crew.

A recapitulation of the trip made by the pilot was as follows:

March 21: Nice-Algiers-El Golea-Tamanrasset, amounting to eight hours of flying with two intervening stops.

March 22: Tamanrasset-Gao-Ougadougou-Abidjan, i.e., eight hours of flying with two stops.

March 23: Abidjan-Bobo Dioulasso-Bamako-Gao, i.e., eight hours and thirty minutes of flying with two stops.

Proposed for 24 March: Rise at 1 a.m., take-off at night from Gao and two hours of night flying to Tamanrasset. Stops at Tamanrasset, El Golea, Algiers and Nice, amounting to about twelve hours of flying.

It can therefore be appreciated that the pilot was tired on arrival at Gao, and after a relatively short rest, he hesitated to leave in view of the heavy schedule outlined for the following day.

According to the practice within the airline, the pilot could have delayed his departure from Gao and reached Nice two days later, in spite of the message received from Algiers, but for personal reasons this alternative was waived by him.

Probable Cause

The probable cause was an untimely contact with the ground after a take-off at night without any visible references beyond the runway lights. The contact was due to an unsuspected loss of altitude.

The reasons for this poor altitude control are not well-known; they may be attributed to the pilot's state of fatigue or to an occurrence, perhaps of minor significance in the cockpit which distracted the pilot's attention.