

No. 14

Taxader, DC-3, HK-794 accident at Barrancabermeja Airport, Colombia on 23 August 1962. Report released by the Administrative Department of Civil Aeronautics, Colombia.

1. Historical1.1 Circumstances

The aircraft was taking-off on a scheduled public transport flight from Barrancabermeja to Bucaramanga when the accident occurred. Three crew and 29 passengers were aboard. HK-794 started its take-off run from runway 03 at 1557 hours local time but after 250.70 m it began veering left of the centreline and then swerved to the right. At 490.70 m it left the runway, corrected direction, crossed the centreline again and traversed the left-hand safety strip. The pilot corrected to avoid a collision with the T wind indicator and the aircraft entered the parking apron. The pilot applied full power as he altered direction to align the aircraft parallel with the main runway. The starboard wing grazed the apron surface, and the aircraft bounced several times. The pilot decided to take-off from the apron and attempted after a run of 258.50 m to lift the aircraft without the necessary speed. The wing tips struck two helicopters on the ground, and the tail skid and cone struck a fuel tank at the edge of the apron. The aircraft cartwheeled 180° to port and fell into a depression 30 m deep and 120 m from the northern edge of the apron.

1.2 Damage to the aircraft

The aircraft was totally destroyed.

1.3 Injuries to persons

Two crew and 17 passengers lost their lives as a result of the accident, and ten passengers were injured.

2. Facts ascertained by the Inquiry2.1 Aircraft information

The aircraft's Certificate of Airworthiness was valid at the time of the accident. The gross weight of the aircraft at take-off (11 078 kg) was below the maximum permitted (11 431 kg). The centre of gravity, at 30.05% of the mean aerodynamic chord, was behind the aft limit of 28%. The aircraft was, therefore, tail heavy. However, this factor was not believed to be a cause of the accident.

2.2 Crew information

The pilot-in-command had flown a total of 9 532.48 hours including 2 007.58 hours on this type of aircraft.

The co-pilot had a total of 6 295.01 hours to his credit of which 1 500.57 were on this aircraft type.

Both pilots had valid licences endorsed for this aircraft type and held valid medical certificates. The stewardess also held a valid licence authorizing her to serve on DC-3's.

2.3 Weather information

At the time of take-off the wind was westerly at 7 km an hour.

2.4 Navigational aids

Not relevant to the accident.

2.5 Communications

Communications with the control tower were normal.

2.6 Aerodrome installations

The length of the runway in use was 5 486 ft, and it has a concrete surface.

2.7 Fire

A fire followed impact due to the bursting of fuel tanks and escape of fuel. The fire fighting equipment was insufficient to deal with an accident of this magnitude, bearing in mind the speed with which fire broke out.

2.8 Wreckage

Examination of the wreckage showed that the aircraft hit the ground at an angle of 15° and travelling at a speed of 45 to 50 kt. It covered a distance of 120 m following the main impact.

3. Comments, findings and recommendations

3.1 Discussion of the evidence and conclusions

If during its 820.70 m run between the start of take-off and its attempt to become airborne from the apron the aircraft had any power, brake or undercarriage failure, both the behaviour of the crew and the aircraft's tire marks would have been different, since

- a) If the aircraft had from the start travelled in one direction and left the runway on one side or the other, this would have indicated a complete loss of control by the crew. As there were several changes of direction, this was not the case.

- b) If for any reason, including failure of a power unit, an emergency had arisen, the pilot would have used the most appropriate technique to discontinue take-off and would not have insisted, as he did, on continuing it on or off the runway.
- c) If an engine had failed wholly or intermittently, no pilot would have attempted to take off at maximum load after a run of 820.70 m, especially with the centre of gravity behind the aft limit.
- d) It was established that at the time of the accident the engines and propellers were at full power and fine pitch respectively (high rpm).

3.2 Probable causes

The main cause of the accident was faulty piloting in the form of poor flight technique during take-off, with overcontrol of the aircraft throughout the 1 169.70 m covered.

The pilot used faulty judgement in trying to take off outside the main runway 03 in use at the time.

A contributing factor was faulty dispatching of the aircraft whose centre of gravity was outside the aft limit for take-off with maximum load at Barrancabermeja Airport.

3.3 Recommendations

It is recommended that

- 1) Taxader Airlines be given the minimum notice of 60 days to organize and submit to the Administrative Department of Civil Aeronautics programmes for ground classes covering the theory of flight equipment in use by the airline, with adequate use of training aids and in-flight and operations manuals.
- 2) Resolution No. 306 for the revision of Part I, 12.1.5.1, para. 3, of the Manual of Regulations be cancelled in order to prohibit all training flights in passenger-carrying aircraft, and that control flights be carried out with a pilot possessing an instructor's licence endorsed for the relevant aircraft.

- 3) All flight dispatchers employed by this airline at all airports should have valid licences rated for the pertinent aircraft.
- 4) ECA make a study of all its airports and draw up a plan to provide them with adequate fire fighting equipment according to their size and classification.

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