

No. 4

Garuda Indonesian Airways, Douglas DC-3C, PK-GDI, struck mountain ridge of Burangrang, 53 NM southeast of Djakarta, Indonesia on 24 January 1961.  
Report released by the Ministry of Air Communications, Indonesia.

Circumstances

PK-GDI, owned and operated by Garuda Indonesian Airways was flying a scheduled domestic service between Djakarta and Surabaya with stops at Bandung and Djokjakarta. It departed Kemajoran Airport (Djakarta) at 0209 Z, climbing to a cruising altitude of 3 500 ft to fly below clouds. At Purwakarta, a point approximately 43 NM from Kemajoran, the captain asked to leave flight level 35 and to climb to flight level 95. The call was made at 0243 Z and acknowledged by Djakarta control. The flight was then instructed to contact Husein tower at Bandung. The flight was heard at approximately 0245 Z calling Husein tower, however, the latter did not acknowledge. When the aircraft failed to report to Husein tower at the estimated time of arrival, Djakarta control was informed that it was overdue. It crashed at approximately 0248 Z.

The wreckage of the aircraft was sighted at 0230 hours on 28 January on the western slope of Mount Burangrang at an altitude of 5 400 ft. None of the 5 crew and 16 passengers survived the accident. The aircraft was destroyed by impact and fire.

Investigation and Evidence

The crew, the aircraft and the operator were currently certificated.

Maintenance requirements for the aircraft had been met.

Preparations for the flight were satisfactorily completed, and an instrument flight rules flight plan was filed. At

time of take-off the aircraft's gross weight (11 778 Kg) was within the maximum allowable, and the load was properly distributed.

Reconstruction of the flight

Prior to departure from Kemajoran Airport the available en route and terminal weather forecasts were reviewed by the captain.

The Garuda procedure was to fly VMC (visual meteorological conditions) if conditions permitted or to climb and maintain flight level 95 to clear the mountains.

The flight (GA 424) attempted to contact Husein tower at 0244Z, as overheard by Kalidjati and Kemajoran towers, and again at 0245 Z, as heard by a Garuda pilot on a training flight. In the 0245 call the aircraft was requesting weather information from Husein, however, the calls were not received.

Other pilots flying at the same time observed westerly winds of 20 - 30 kt. According to the weather forecast the winds were expected to be about 16 kt.

The investigating committee felt that the flight proceeded normally from Kemajoran to Purwakarta. It is difficult to believe that the captain attempted to make a direct flight from the Purwakarta area to Husein considering the hazardous terrain south of Purwakarta over which he had to fly. Assuming that his position at 0243 Z over Purwakarta was correct and considering his request to climb to 9 500 ft, he must have flown VMC (according to the Company's procedure) until he reached a point where he was forced to climb to 9 500 ft. Purwakarta beacon was declared unreliable

by the Company during the last six-month period.

The distance from Kemajoran to Purwakarta was flown in twenty-one minutes, whereas it should have been covered, in view of the prevailing winds, in seventeen minutes. Four extra minutes may possibly have been used in making turns to avoid clouds. Assuming that the wind was 300/20 kt, the possible positions of the aircraft before commencing the climb to 9 500 ft would more likely be past Purwakarta by one or two minutes.

It appeared most probable that the flight encountered poor visibility and bad weather, for if the visibility were good the crew would be aware of the surrounding terrain.

The actual weather conditions on the route, according to pilots flying before flight GA-424, were generally scattered cumulus clouds with showers north of the track. Cloud base was 1 500 - 2 000 ft. Over the Sanggabuana and Burangrang areas there was heavy rain, and the visibility over these areas was zero. During this time of year the mean position of the inter-tropical front was over Java. On that date the inter-tropical front was active over West Java.

According to the fact that a climb was made to 9 500 ft at 0243 Z, the captain was supposed to be fully aware of his position somewhere over Purwakarta and was encountering bad weather. The Company's instructions are that a pilot should make a spiral climb to 9 500 ft if he is certain of his position, or climb to the north to reach flight level 95 before crossing the mountains if he is not sure of his position. The accident site showed that he was 6 NM east of the track. The question was how he could have arrived at that spot.

The captain knew that he was somewhere over Purwakarta but probably could not determine with certainty the exact position and was proceeding presumably by

dead reckoning. Or, he must have made an error in determining his position. Nevertheless, he proceeded to climb, without visual reference. Considering the winds of 20 - 30 kt and the weather conditions, he could have drifted to the east causing errors in the determination of his position.

A climb from this position to the south, as was shown by the direction of the accident, would be very critical. From the time of the captain's call to Djakarta control at 0243 Z, requesting to climb to flight level 95, to the time of the accident at 0248 (as indicated by the co-pilot's watch), the aircraft had climbed from an altitude of 3 500 to 5 400 ft. The only procedure which could be justified in this condition was a climb in a northerly direction. The possibility that the captain had used his radio compass to determine his position and, in so doing, obtained an erroneous position should not be completely ruled out. However, even so, the climb procedure adopted by the captain cannot be justified, and was not in accordance with the Company's instructions.

The possibility of engine malfunction cannot be eliminated, although this would not be compatible with the fact that the aircraft at this gross weight climbed 1 900 ft in approximately 5 minutes. Also, if an engine had been lost or the aircraft had been changed to a northerly heading, the captain would have radioed as he was fully aware of the hazardous terrain. His last attempted contact with Husein tower was for the purpose of obtaining weather information, and at that time the captain did not report having encountered any difficulty with the aircraft's engines or components. There was no evidence of a bomb explosion.

The Investigating Committee concluded that the aircraft after departing from Kemajoran attempted to fly VMC. It also believed that as the flight progressed towards the mountainous area the overcast lowered and intermittently the aircraft had to fly through cloud finally going completely on instruments several minutes before the crash.

Probable Cause

The probable cause of the accident was the attempt by the pilot to fly over

mountainous terrain when unsure of his position and in weather conditions which severely restricted visibility.

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