

No. 6

Civil Air Transport Co. Ltd., C-46DM, B-908, accident at Triangle Village, Taichung, Taiwan, Republic of China, on 20 June 1964. Report dated 30 August 1964, released by the Civil Aeronautics Administration, Ministry of Communications, Republic of China.

1. - Investigation1.1 History of the flight

The aircraft was on a scheduled domestic flight along the following route: Taipei-Taichung-Tainan-Makung-Kachsuing-Makung-Tainan-Taichung-Taipei. Between 1738 hours local time and 1740 hours, it crashed in a rice paddy at a place called San Chiao Village, north-northeast of Shui-Nan Airport, Taichung.

1.2 Injuries to persons

Injuries	Crew	Passengers	Others
Fatal	5	52	
Non-fatal			
None			

1.3 Damage to aircraft

The aircraft was destroyed.

1.4 Other damage

None mentioned.

1.5 Crew information

The pilot-in-command, aged 39, held an airline transport pilot's licence with ratings for multi-engine land including C-46 and DC-4 aircraft and instruments. He had flown a total of 12 453 hours, including 8 640 hours as pilot-in-command, 1 481 hours as co-pilot, 778 hours by night and 1 544 hours on instruments.

The co-pilot, aged 48, held a senior commercial pilot's licence with ratings for multi-engine land and sea including C-46, C-47, DC-4 and PB5Y-5A aircraft instruments. He had flown a total of 14 911 hours.

1.6 Aircraft information

The aircraft had a certificate of airworthiness valid until 29 October 1964. It had logged a total of 19 488 hours. The aircraft's gross weight at the time of the accident was well within the maximum permissible limits. The position of the centre of gravity was not mentioned in the report.

1.7 Meteorological information

The weather at the time of the accident was good. Wind velocity was not high and visibility was good.

1.8 Aids to navigation

Not pertinent to the accident.

1.9 Communications

No difficulties were reported.

1.10 Aerodrome and ground facilities

Not pertinent to the accident.

1.11 Flight recorders

Not mentioned in the report.

1.12 Wreckage

The wreckage distribution was on a magnetic heading of 280°. Impact marks revealed that the aircraft struck the ground in a left wing low and a comparatively steep nose low attitude. The airplane structure was severely disintegrated. No indication of fatigue cracks was found.

1.13 Fire

No indication of in-flight fire was found.

Only a few pieces of the wreckage bore evidence of a relatively light and short fire after the accident. These were in the right outer wing forward of the aileron, the outer part of the left wing centre section, the left side of the vertical tail, one piece of wreckage comprising the outer section of the left elevator and the lavatory area of the passenger cabin.

1.14 Survival aspects

All of the 53 passenger seats and the two stewardess seats were accounted for. In general, the leg structures were buckled and broken due to loads acting to the left, downward and forward, and with the legs separated from the wedgit fittings. Most of the seat belts were unbuckled without any noticeable damage due to high impact loads, although several remained buckled and two were cut through the webbing after being mud splattered.

1.15 Tests and research

The right and left elevator trim cables were found to have failed at various distances from the cable drums. Sections of the cables were sent to the United States CAB in order to determine the type of failure. On 11 July 1964, the following report was received from the CAB:

"Cable sections are standard twisted steel one-eighth inch aircraft cable seven strands, seven wires to a strand.

Right elevator trim cable appears to be overload tension failure. No evidence of significant damage or wire failure prior to failing overload. Left elevator trim cable: entire 8-inch length shows serious wear to extent that all exposed wires around most of periphery in each twist of outer strands are worn to about one half original diameter. In the last half inch preceding ravelled end there are 13 wire ends showing in a straight line along side. Centre strand failed in pure tension with no sign of previous damage or wear."

2. - Analysis and Conclusions

2.1 Analysis

At the time of the accident the flaps and the landing gear were fully retracted. No evidence of pre-crash malfunction or failure of the aircraft, its engines, controls and equipment was found. However, seven out of twenty witnesses who were near the site of the accident stated that they heard abnormal loud noises before the crash occurred. It was believed that this was due to the overspeeding of one engine. The impact marks at the site of the accident revealed that the aircraft made a sudden turn to the left. This was further confirmed by the testimony of six out of the twenty witnesses. Kung-Kuan Air Force Base was located about 5 miles west of the accident site and Shui-Nan Airport, from which the aircraft took off, was about 6 miles south-southwest of the accident site. It was therefore concluded that, when the engine started overspeeding, the pilot intentionally made a sudden turn to the left to land at one of these two airfields, but lost control of the aircraft during the turn and crashed.

2.2 Conclusions

Findings

The crew were satisfactorily certificated.

The aircraft had a valid certificate of airworthiness and was loaded within the permissible limits.

Weather was not a factor in the accident.

The left engine oversped. Since there were two airfields to the left of the flight pattern, the pilot effected a left turn which resulted in a steep descent and the aircraft crashed to the ground.

Cause or
Probable cause(s)

About 5 miles west of the accident site was Kung-Kuan Military Air Base. Six miles south-southwest was Shui-Nan Airport from where the aircraft took off. On the right side of the flight pattern was a chain of mountains. It was concluded that, when the pilot found that the left engine was overspeeding, he made an abrupt left turn to land at Kung-Kuan Military Air Base or return to Shui-Nan Airport. During the turn he lost control of the aircraft, which crashed to the ground.

3.- Recommendations

The power unit of the left propeller had not yet been recovered. In order to have the correct blade angle measurement of the power unit of the left propeller, it is recommended that the search for the power unit be continued.

During the examination of the wreckage some of the control cables of the aircraft were found to be severely worn out. This revealed some negligence on the part of the owner of the aircraft, Civil Air Transport, in the aircraft maintenance.

Civil Air Transport should pay more attention to proficiency checks and training of their pilots.