PART 1

SUMMARIES OF AIRCRAFT ACCIDENT REPORTS AS PREPARED BY ICAO

No. 1

Línea Aérea Nacional (Chilean National Air Line) DC-6B, CC-CCG, accident on a mountain ridge of the Andes on 6 February 1965. Report undated, released by the Civil Aviation Board, Chile

1. - Investigation

1.1 History of the flight

Flight 107 was a scheduled international flight from Los Cerrillos Airport, Santiago (Chile) to Montevideo, Uruguay, with a scheduled stop at Buenos Aires, Argentina. The flight plan was as follows:

(a) VMC - Santiago-Melipilla-Cerro Maipo climbing to 19 000 ft;

(b) VMC - Cerro Maipo-San Rafael-Huinca Renanco-Junín-Suipacha-Buenos Aires (Ezeiza) in level flight at 19 800 ft.

The aircraft took off at 0806 hours from south to north in the direction of the city of Santiago. It flew low over the city in the Cerro San Cristobál area and later between 0810 and 0812 hours in the vicinity of Cerro Marquehue. At 0817 hours, it made radio contact with Panagra Control to request a change of route via Amarillo-Tumuyan Viejo-Reynolds 5 700 m. Mendoza Control authorized the change of route and asked for the estimated time over Amarillo. The flight replied that it estimated reaching Amarillo at 0836 hours. At 0822 the radio contact came to an end. The aircraft continued inland at low altitude in relation to the surrounding terrain, via Farellones, Lagunillas, Planta Queltehue and Lo Valdés. At 0836 hours, several witnesses saw the aircraft crash into the ridge joining the Catedral and Corona peaks.

1.2 Injuries to persons

Injuries	Crew	Passengers	Others
Fatal	7	80	
Non-fatal			
None			

1.3 Damage to aircraft

The aircraft was completely destroyed.

1.4 Other damage

No objects other than the aircraft were damaged.

1.5 Crew information

The pilot-in-command held a valid airline transport pilot's licence. He had flown a total of 10 868 hours on various types of aircraft including the DC-6B, and had crossed the Andes 24 times as pilot-in-command and 102 times as co-pilot.

The co-pilot held a valid commercial pilot's licence. He had flown a total of 2 604 hours on various aircraft including the DC-6B, and had crossed the Andes 16 times as co-pilot.

Also aboard the aircraft were a maintenance crew member, a radio operator, a steward and two stewardesses.

1.6 Aircraft information

The aircraft had a certificate of airworthiness valid until 30 October 1965. It had flown a total of 17 085 hours, including 27 hours since its last periodic overhaul.

The aircraft was loaded within permissible limits.

The type of fuel being used was not stated in the report.

1.7 Meteorological information

Weather was not a factor in the accident.

1.8 Aids to navigation

Not mentioned in the report.

1.9 Communications

Communications were satisfactory until 0822 hours when they ended.

1.10 Aerodrome and ground facilities

Not pertinent to the accident.

1.11 Flight recorders

Not mentioned in the report.

1.12 Wreckage

In view of the disintegration of the aircraft, it was impossible to determine with precision the initial location on the aircraft of the flight control surfaces, the control cables and electrical cables.

1.13 Fire

There was no fire.

1.14 Survival aspects

None mentioned in the report.

1.15 Tests and research

The propeller governor which was identified as belonging to No. 1 engine suffered on impact structural distortion on the outer casing which blocked the control ratchet of the pilot valve distributing oil to the propeller hub. By measuring the displacement of the pilot valve stem and applying this measurement to a new governor of the same type and capacity, it was possible to establish that at the time of impact No. 1 engine was working at 2 400 rpm.

The propeller governor which was identified as belonging to No. 2 engine suffered on impact loosening of part of the outer casing which, when the engine stopped abruptly, caused the spring recovery mechanism of the governor to return the control ratchet of the pilot valve to neutral. However, some grit and earth had stuck on the ratchet system at impact and left distinct traces on the system. By matching these marks it was possible to establish the position of the governor at the time of impact and, by following the same procedure as that described in the previous paragraph, to establish that No. 2 engine was also working at 2 400 rpm.

From external and internal examination of the engine ignition system control box (magnetos) it was established that the ignition systems of Nos. 2, 3 and 4 engines were switched on and that these engines were working at the time of impact. No conclusion could be reached regarding No. 1 engine.

It was also established that the propeller blades of No. 1 engine were not feathered and that the propeller was working at the moment of impact.

2. - Analysis and Conclusions

2.1 Analysis

Mechanical and structural failure were ruled out as possible causes of the accident.

The flight plan presented to the pilot-in-command and approved by him was in conformity with national and international standards.

However, it was established that the pilot-in-command followed a route which was neither in accordance with the provisions and directives of the Flight Operations Manual of the airline nor with the approved flight plan.

2.2 Conclusions

Findings

The crew were properly certificated and had considerable experience.

The aircraft had a valid certificate of airworthiness.

The general planning of the flight was in conformity with national and international standards.

Weather was not a factor in the accident.

The engines were working at the time of impact.

Mechanical and structural failure were ruled out as possible causes of the accident.

The pilot-in-command carried out the flight in infringement of both the provisions and directives of the Flight Operations Manual of the airline and the flight plan approved by him.

Cause or
Probable cause(s)

The accident was caused by lack of discipline on the part of the pilot-in-command of the aircraft who did not follow the instructions of the flight plan or those relating to crossing the mountains.

3. - Recommendations

None were contained in the report.