

No. 9

Civil Air Transport, Boeing 727-92C, B-1018, accident at Linkuo, near Taipei, Taiwan, on 16 February 1968. Report not dated released by the Civil Aeronautics Administration, Republic of China

1.- Investigation1.1 History of flight

Flight No. 10 operated by Civil Air Transport was a scheduled international flight from Taipei to Hong Kong and return.

The accident occurred on the return trip from Hong Kong to Taipei. The aircraft departed Hong Kong at 2018 hours local time. At 2045 hours it reported to Taipei Area Control Centre over Yellowtail, a compulsory reporting intersection, at flight level 29 000 ft. At 2059 hours it reported over Makung VOR, and was then cleared to descend to 11 000 ft. At 2111 hours it reported over Hsinchu (PO) NDB at 11 000 ft and was cleared to descend to 5 000 ft crossing Taoyuan (GM) NDB and to 2 000 ft crossing Linkuo outer marker for a straight-in ILS approach to runway 10. The current Taipei weather information was also given to the pilot at that time. At 2118 hours the aircraft reported approaching Linkuo outer marker at 2 000 ft and was cleared to continue its ILS approach and to contact Taipei Tower. The aircraft reported to Taipei Tower and requested landing instructions. The tower controller advised the pilot to continue his ILS approach to runway 10, gave him the surface wind and the altimeter setting and requested him to report approach lights in sight. The pilot acknowledged all this information. From that moment, even though repeated attempts to contact the aircraft were made by Taipei Tower and Taipei Area Control Centre, no further communication was received from the aircraft. Then, right after, Taipei Area Control Centre was informed that the aircraft had crashed in the vicinity of Linkou, about 8 miles west of Taipei City.

It was found during the investigation that the left hand pilot seat was not occupied by the assigned pilot-in-command, but by another Senior Pilot of Civil Air Transport Co.

1.2 Injuries to persons

Injuries	Crew	Passengers	Others
Fatal	3	18	1
Non-fatal	8	34	
None			

1.3 Damage to aircraft

The aircraft was destroyed.

#### 1.4 Other damage

A farm house at the accident site was destroyed, and a young man who lived in the house was killed.

The site where the aircraft crashed was a tea plantation. Due to the scatter of wreckage and the rescue and investigation work, about one half of the tea trees were damaged.

#### 1.5 Crew information

a) The pilot-in-command, aged 46, who had been rostered for the flight and was listed on the Flight Plan, held a valid airline transport pilot's licence issued by the Republic of China and one issued by the USA. He worked with Air Asia Co., Ltd. and was transferred to Civil Air Transport Co. Ltd., under a service contract between the two companies. He had been sent by Air Asia to Southern Air Transport Inc. (USA registered) for Boeing 727 flight training. He had logged 27:11 hours during training, and 104:24 hours as pilot-in-command on Boeing 727 with Southern Air Transport. On January 1968, Civil Air Transport bought a Boeing 727-92C to replace its Convair 880 on international flights. Then, Air Asia shifted him back to Civil Air Transport where he logged a further 26:55 hours as pilot-in-command on Boeing 727. He passed his most recent medical examination on 11 August 1967.

b) The co-pilot, aged 45, held a valid airline transport pilot's licence issued by the Republic of China. He had logged 35:06 hours during training, and 108:55 hours as co-pilot on Boeing 727 with Southern Air Transport. He passed his most recent medical examination on 9 February 1968.

c) The third crew member, aged 42, held a valid commercial pilot's licence issued by the Republic of China. He had logged 30:58 hours during training and 122:29 hours as co-pilot or third crew member on Boeing 727 with Southern Air Transport. He passed his most recent medical examination on 11 November 1967.

d) The "Senior Pilot", mentioned in paragraph 1.1 above, aged 51, held a valid airline transport pilot's licence issued by the Republic of China and one issued by the USA. Air Asia had sent him to the Boeing Company, Seattle, Washington, USA, for Boeing 727 flight training. He had logged 28:25 hours during training, and had flown 142:13 hours as pilot-in-command on Boeing 727 with Southern Air Transport. Air Asia later shifted him back to Civil Air Transport as Deputy Director, Flight Operations Division, and he logged a further 2:33 hours on Boeing 727. He had not been rostered to fly as pilot-in-command on Boeing 727 during the last 56 days prior to the accident. He passed his most recent medical examination on 6 November 1967.

#### 1.6 Aircraft information

The certificate of airworthiness of the aircraft had been issued by the Civil Aeronautics Administration and was valid until 5 January 1969. The aircraft had been satisfactorily maintained and operated within the specified limits. The aircraft had flown a total of 3918:16 hours before this accident. Engine hours were: No. 1, 1367:09 hours; No. 2, 2647:19 hours; No. 3, 627:50 hours.

The take-off weight of the aircraft on this trip was 135 644 lb and its estimated landing weight was 133 672 lb; both were within permissible limits. The centre of gravity of the aircraft was also within permissible limits.

The aircraft was supplied with proper fuel.

#### 1.7 Meteorological information

a) The 2100 hours Taipei International Airport weather report was: Cloudy with light rain; ceiling 2 500 ft; horizontal visibility 4 miles; surface wind, easterly/13 kt; temperature 12°C; dew point 10°C; QNH 30.17 in Hg; rainfall 0.2 mm.

b) The upper wind analysis in the Taipei area based on the 2000 hours en-route cross section was: from surface to 500 ft, easterly wind/10 - 15 kt; above 15 000 ft, south-westerly wind/15 - 20 kt; only above 18 000 ft, the wind speed increased to 60 kt.

c) Taipei radio sounding report made by the Taiwan Weather Bureau was: From surface to 5000 ft, cold polar air mass; above 5000 ft, warm advection. 5000 ft to 14000 ft, altostratus; from 800 to 3000 ft, strato-cumulus or stratus.

d) Turbulence Analysis: On the afternoon of 16 February 1968, there was neither thunderstorm nor cold front passing. With respect to air mass analysis, the cold air ran under the warm air, and no significant instability was observed. The air current was advection. The lower layer wind speed was well below 25 kt.

#### 1.8 Aids to navigation

The Instrument Landing System at Taipei International Airport included localizer, glide path and middle and outer markers. Also, at the sites of middle and outer markers, locators were established for aircraft using Automatic Direction Finder (ADF). There was also a monitor equipment set at the Approach Control Centre. All the equipment was properly maintained and was in normal operating condition at the time of accident. Periodic flight checks on these installations were made in accordance with the provisions of US FAA maintenance manual. Also, whenever deficiencies in the functions of any portion of the system are noticed by pilots of airlines, they are required to report to CAA which carry out an additional flight check. A periodic flight check was carried out on 15 January 1968 and the system was found to be satisfactory. Furthermore, on 16 February 1968, within a period of two hours before and after the accident, six other aircraft had smoothly approached and landed at Taipei International Airport using the same instrument landing system.

#### 1.9 Communications

Communications between the aircraft and both Taipei Approach Control Centre and Taipei Tower were normal and were tape-recorded up to 2118 hours, just about the time of the accident.

#### 1.10 Aerodrome and ground facilities

Aerodrome and ground facilities of Taipei International Airport were adequate and normal. The lighting system was adequate and operating normally at the time of the accident.

### 1.11 Flight recorders

The aircraft carried a Fairchild Flight Data Recorder and a Fairchild A-100 Voice Recorder. Both recorders were found after the accident and the tapes were in good condition for re-assembling and reading-out. (See Fig. 9-1.)

### 1.12 Wreckage

The site of the accident and the distribution pattern of the wreckage are shown in Fig. 9-2.

The fuselage was broken off near the tail section and was nearly completely destroyed by the subsequent fire, only a few frame structures remained. The tail unit was separated from the fuselage, resting upside down about 100 metres away from it and free from fire damage. The left wing was broken off at the root, but remained close to the fuselage. Flaps and leading edge slats were extended; they were damaged and slightly burned. The right wing was broken off at the root, resting at about 15 metres from the fuselage; its flaps and leading edge slats were broken away and scattered over other locations of the site. All three engines were separated from their mounts and were damaged. Landing gears and nose gear were broken off from their original position and were damaged.

### 1.13 Fire

The Taipei International Airport Flight Safety Section received notification of the accident from the Tower at 2126 hours, and immediately dispatched its fire fighting unit to the accident site. When the fire fighting unit reached the site at 2158 hours, there were several fire trucks of the police station and American military units nearby already working on the fire and searching for injured persons. The fire fighting unit joined the fire fighting and searching until the fire was under control. At the same time, all the injured passengers and crew were transported to various hospitals in Taipei City for treatment. The work of searching and removing bodies of fatally injured persons continued for some time.

### 1.14 Survival aspects

The accident site was of easy access by a good road. All the injured passengers and crew were promptly evacuated to hospitals for treatment.

### 1.15 Tests and research

Not applicable.

## 2.- Analysis and Conclusions

### 2.1 Analysis

Prior to the flight, the aircraft was airworthy and no malfunctions were reported during the flight. After the wheels touched the ground, the aircraft was pulled up in the air again till it struck some trees and a farm house and crashed. This accident was not due to any mechanical malfunction or failure of the aircraft.

According to the weather analysis (temperature, atmospheric pressure and wind velocity) there was no turbulence at the accident site. This accident was not due to weather conditions.

Six other aircraft had smoothly approached and landed at Taipei International Airport using the Instrument Landing System within a period of two hours before and after the accident. This accident was not due to any deficiency of the Instrument Landing System.

According to the read-out of the communications recording made by the air traffic service, the communications between the aircraft and the ground control were normal, and the instructions issued to the aircraft were proper. This accident was not due to any deficiency in the functions of the air traffic service facilities or personnel.

## 2.2 Conclusions

The "Senior Pilot" who was actually at the controls failed to maintain proper altitude while approaching the Linkou outer marker and the aircraft was far below the required altitude; consequently the aircraft could not intercept the glide path. When the radio altimeter warning light came on, while the aircraft descended to an altitude of 350 ft, the pilot failed to take corrective action in time. The wheels touched the ground and the aircraft rolled on the ground for about 200 metres. The aircraft was then pulled up in the air but it hit trees and a farm house and subsequently crashed. It was concluded that this accident was caused by careless operation in piloting the aircraft. According to the Flight Plan and documents of this flight, the pilot-in-command was properly assigned. Although the above-mentioned "Senior Pilot" held an appropriate licence with a rating for Boeing 727 aircraft, he was neither the assigned pilot-in-command nor a pilot under training on this flight. It was concluded that in allowing him to perform the functions of pilot-in-command, the assigned pilot-in-command of this flight, was also at fault.

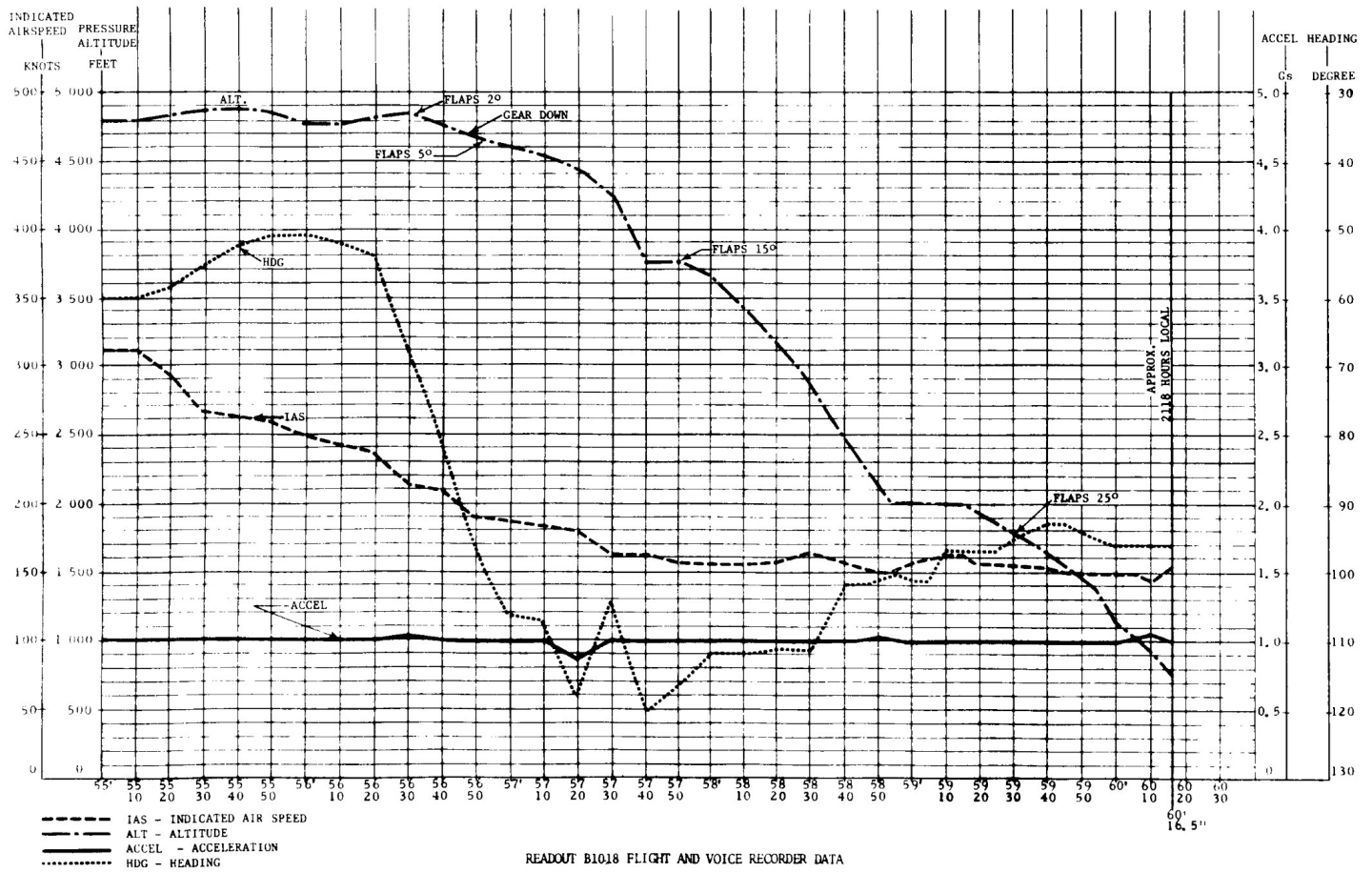
## 3.- Recommendations

Following this accident it was recommended that:

1. Licences of both pilots - the pilot-in-command and the other senior officer of the company be revoked permanently.
2. The company ensure that all flight crews be strictly dispatched according to the Schedule issued by its Operation Department.
3. The company be requested to prepare a detailed programme regarding flight crew training and dispatching for approval.

Scheduled international  
Landing  
Collision - ground  
Pilot - improper IFR procedure  
improper supervision

ACCIDENT TO BOEING 727-92C, B-1018, OF CIVIL TRANSPORT, AT LINKUO,  
NEAR TAIPEI, TAIWAN, ON 16 FEBRUARY 1968



READOUT B1018 FLIGHT AND VOICE RECORDER DATA

TAIPEI, 16 FEBRUARY 1968

DATE: 26 FEBRUARY 1968

Fig. 9-1

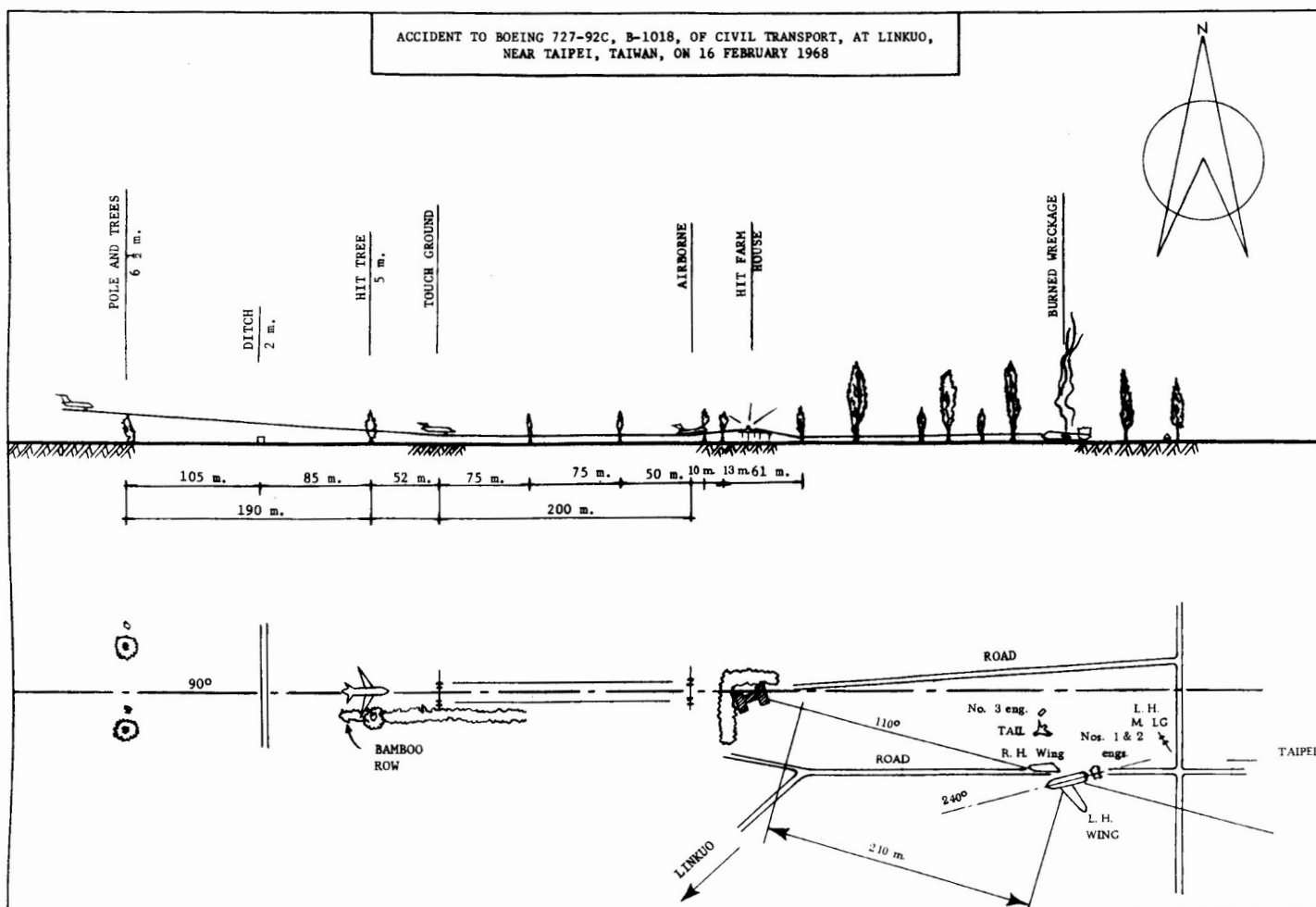


Fig. 9-2