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Confidential

Petition No. C-53-15882

Date: July 2, 1964

To : Civil Aeronautics Administration

REC'D WAS JUL 7 1964

From : Civil Air Transport Company Limited

Subject : Aircraft Accident Report Curtiss C-46 DM, B-908 Accident at Fung-Yuan, 20 June 1964

Further to our Petition C-53-15805 dated June 24, 1964, we herewith report the result of the accident investigation up to June 30, 1964:

SYNOPSIS

Civil Air Transport Flight CT-106, a Curtiss C-46 DM, Republic of China Registration B-908, departed the blocks at 0932Z (1732 hours local) 20 June 1964 from Sui Nan (Taichung) Airport on a scheduled flight to Taipei. At 0935Z (1735 hours local) the aircraft made a normal take-off from North to South on runway 18. After becoming airborne the aircraft made a left climbing turn to the North and proceeded northbound slightly east of course on instructions from the tower. These instructions were necessitated in order to keep aircraft departing Sui Nan clear of the traffic pattern at neighboring Kung-Kuan Airport. The aircraft had, some minutes before development of the events leading to the crash, successfully negotiated the relatively more critical phases of take-off and was proceeding on course in climb configuration with all indications aboard reported satisfactory by radio from the aircraft. The accident is not regarded as a "take-off" accident. At approximately 0940 (1740 hours local) a column of smoke was spotted in the vicinity of Fung-Yuan which subsequently proved to be the site of the crash of B-908.

At the present time there is no determination as to the cause of the crash. The remains of the aircraft and its components have been removed from the site and have been shipped to Air Asia Company Limited Maintenance Base at Tainan Airfield, Tainan, Taiwan for study and evaluation when directed by the appropriate authorities.

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for Office of Vice President/Secretary-Legal Counsel

July 2, 1964

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INVESTIGATION

Civil Air Transport Flight CT-106, (B-908) was a scheduled passenger flight from Kaohsiung to Taipei, Taiwan with enroute stops at Makung, Tainan and Taichung. The flight operated through Makung and Tainan on schedule, arriving Taichung at 0922Z (1722 hours local) and blocking in at 0924Z (1724 hours local). After landing at Taichung several passengers disembarked and sixteen (16) passengers embarked. The total load for the trip from Taichung to Taipei then consisted of 52 passengers and 5 crew members and 894 pounds of baggage and cargo. The gross weight of the aircraft for take-off was thus 45,994 pounds or slightly more than 2,000 pounds below the maximum allowable take-off weight of 48,000 pounds. The aircraft blocked out of Taichung at 0932Z and took off at 0935Z. The crew consisted of the Captain, First Officer, First and Second Stewardesses and a Flight Steward. The flight had been routine up to the point of last contact and was conducted under Visual Flight Rules (VFR). The pilot after departure northbound from Taichung to Taipei left the traffic pattern and called Sui Nan Tower at Taichung on VHF Channel "B": "CAT 908 leaving the channel (VHF) see you tomorrow."

As recorded by the tower operator at Sui Nan (Taichung) Airport, B-908 blocked in at Sui Nan at 0924Z (1724 hours local). The co-pilot then filed a Flight Plan with Base Operations, Sui Nan, requesting clearance to fly Airways from Taichung to Taipei. Permission was granted by Air Traffic Control and the aircraft started to taxi from the passenger loading area at 0932Z (1732 hours local). Inasmuch as a light southwest wind was blowing at the time, Runway 18 (180° is the Azimuth heading of the runway) was used. The weather was reported at 0945Z (1745 hours local) to be scattered clouds at 2,000 feet, high scattered clouds at 28,000 feet, visibility 10 miles, surface wind 10 knots from 180 degrees. The aircraft was taxied to the end of the runway. At this point it is assumed that the standard normal "Preflight" checks, i.e. engine operation and control checks, were performed. The aircraft took-off to the South at 0935Z (1735 hours local). The Tower Radio Telephone Operator and witnesses who were playing soft-ball one and one half miles south of the airport watched the aircraft depart and all state the departure appeared quite normal. The aircraft made a left turn after take-off to a northerly heading. A standard rate turn and a normal rate-of-climb would have positioned the aircraft after completion of the turn to the northerly heading at an altitude of approximately 1000 feet. At about this time, one of the pilots called Sui Nan Tower by radio and advised they were climbing on course and would see them tomorrow. According to the Sui Nan Operator, he watched B-908 for a moment and then it is presumed that he turned his attention to other activities, since the Tower ceases operations in the evening at 1800 hours local. The Tower Operator estimated that he observed B-908 from the time of take-off for approximately two and one half minutes. Approximately three minutes later one of the men assigned to the Fire Brigade at Sui Nan Airport telephoned the Tower Operator and advised him that he could see black smoke about four and one half miles northeast of Sui Nan Airport and inquired if the Tower Operator could ascertain if B-908 was in trouble. Sui Nan Tower Operator was unable to see or contact B-908. Sui Nan Tower then contacted Kung-Kuan Tower and asked them to attempt radio and visual contact with

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B-908. The Kung-Kuan Tower Operator reported to Sui Nan that no radio or visual contact could be made, but that he could see smoke in the direction reported. Subsequently a Chinese Air Force Helicopter reported the smoke was verified as coming from the crash of B-908 and that all aboard were dead. Various witnesses have fairly accurately established that the crash occurred at approximately 0940Z (1740 hours local).

An accident investigating team was immediately organized in cooperation with Civil Aeronautics Administration Officials and was dispatched to the scene. At the crash site it appeared that the aircraft was intact when it made contact with the ground. The aircraft wreckage was strewn along a measured Azimuth of 283 degrees (approximately from east to west). All evidence indicates that the aircraft struck the ground right side up with the left wing lowered and the nose in a descending slope of approximately thirty (30) degrees while on a heading of a little north of west. The place of impact is farm land consisting of rice paddies at varying levels and separated by dikes and ditches with trees growing in or on the edges of the ditches. The aircraft struck the ground and an adjacent rock pile just in front of a deep ditch which was about five meters deep and sheared off trees bordering the ditch. The nose of the aircraft hit the opposite bank of the ditch, which is higher than the near bank on the approach side, and the entire aircraft then bounced in the air, crossing the ditch and shearing another row of trees as it continued forward and ripped apart. The impact was severe. Debris was scattered along a path about 500 feet in length, but several passengers were catapulted further forward and in an extreme case three bodies were found approximately 1,300 feet beyond the impact point. It is believed that all passengers and crew could not have survived the impact. Seats were ripped from their mountings. As the aircraft broke apart the fuel tanks contained in the wings also broke and fuel was scattered over some of the wreckage and burned until all fuel was consumed. Engine oil tanks also broke open and the oil burned. There was no evidence of fire in flight. This is supported by the fact that both the left and right firewall liquid shut-off valves had not been activated "closed" and were found "open". Two Bromo-chlore-methane (CB) type fire extinguishing agent spheres were found, neither of which had been activated. One was found with its pressurized charge intact. The other had had the outlet fitting broken off by the crash impact and had discharged into the water of the small creek in the impact area. Both wings were torn off by the crash impact and neither showed evidence of fire in flight. The engine nacelle areas and the baggage compartment areas also revealed no evidence of fire in flight. All major components were located in the impact area including two engines and all eight of the propeller blades. The manifold pressure gauge found in the wreckage indicated a setting of thirty-three (33) inches of Hg. for both engines. This approximates a setting for cruise power at 3500 feet. All three cockpit trim tab controls found in the wreckage, one each for the ailerons, rudder and elevator were set at essentially "zero" or normal position.

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Evaluation of these findings along with those made after technical investigation of the aircraft wreckage when authorized by the Government authorities will be made. In addition to aircraft wreckage found at the crash site, two pieces of evidence were found which may have a bearing in determining the cause of the accident. They consisted of two large U.S. Navy radar technical manuals apparently from a Republic of China armed forces source of a size approximately $8\frac{1}{2}$ inches wide by 11 inches long and 2 inches deep. The pages inside both manuals had been hollowed out with a cutting instrument in the shape of a Forty-five (45) caliber automatic pistol. Reports are that both pistols have been found at the accident scene. One observer on hand at the discovery of one of the weapons stated that it was found underneath the left engine in the area of the cockpit wreckage. Investigation is continuing in order to substantiate any possible connection between these items and the cause of the crash.

ANALYSIS AND CONCLUSIONS

No determinations can be made concerning the possible cause or causes and contributing factors until such time as all of the relevant technical data and other evidence have been secured, studied and evaluated. All wreckage of the aircraft has been removed to Air Asia Company, Limited Maintenance Base in Tainan for further study and evaluation when authorized by Government agencies in charge.

SUPPLEMENTAL DATA

THE AIRCRAFT

The aircraft is a Curtiss Wright C-46 MD, Republic of China Registry B-908, owned and operated by Civil Air Transport Company Limited. The manufacturer's Serial Number is 32950. The engines are Pratt and Whitney, Model R-2800-75M3, with four bladed, constant speed, full feathering, Curtiss Electric Propellers. This aircraft was manufactured in 1944. However, it must be pointed out that age has almost no effect on aircraft airworthiness because under a proper maintenance system the parts which wear or deteriorate are periodically replaced. Numerous improvements and modernizing modifications resulting from accumulated operating experience of the collective operators of this type of aircraft around the world and from aviation authority directives render it quite superior to its new state in fact. It is further pointed out that the aircraft had been maintained in accordance with a CAA-approved system of maintenance. Maintenance has been performed, under contract, by Air Asia Company Limited in Tainan and Taipei.

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MAINTENANCE OF THE AIRCRAFT

The airframe had a total of 19,488 hours and 37 minutes at the time of the accident.

The left engine (Serial # FP 086389) had a total of 228 hours 10 minutes since overhaul and certification on 6 February 1963 by Air Power Overhaul Inc., San Leandro, California, USFAA approved repair station number 4065.

The right engine (Serial # FP 087304) had a total of 310 hours 40 minutes since overhaul and certification on 4 February 1963 by Air Power Overhaul Inc. San Leandro, California, USFAA approved repair station number 4065.

Daily post flight & pre-flight inspections and services are accomplished in accordance with established procedures. The aircraft had flown 63 hours since the last Number One service was performed on 7 June 1964. It had flown 137 hours since the last Number Two service was performed on 22 May 1964. The next service, a Number Three, was due at airframe time 19,503 hours, or after 15 more hours of flight time.

The last discrepancies noted by the pilot on the aircraft log were on 16 June 1964. They were: a $\frac{1}{2}$ psi left engine fuel pressure fluctuation and higher than normal but below maximum fuel pressure readings while in straight and level flight. These discrepancies were corrected prior to flight and a total of 35 flights flown by three different captains were accomplished prior to the accident with no further discrepancies noted in the aircraft log.

CREW

Captain Benguee Lin, age 38, Republic of China Citizen, held a valid Airline Transport Pilot Licence No. 10200 issued by the Civil Aeronautics Administration with valid MEL DC-4, C-46 and instrument ratings. Capt. Lin had a total of 10,133 flying hours of which 4,914 were in the C-46 type of aircraft. Medical records dating back to July 1, 1961 indicate that all required periodic flight physicals as described in CAR 19 were normal. The last flight physical was taken on 27 February 1964. The last Route Flight Check was taken 31 May 1964 and was rated satisfactory by System Chief Pilot, Captain E. F. Sims.

First Officer M. H. Kung, age 48, Republic of China Citizen held a valid Senior Commercial Pilot Licence No. 20018, issued by the Civil Aeronautics Administration with valid MEL, C-47, C-46, DC-4, MES PBV-5A ratings. He had a total of 12,104 flying hours of which 9,270 were in the C-46 type of aircraft. Medical records dating back

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to June 1, 1961 indicate that all required periodic flight physicals as described in CAR 19 were normal. The last required CAA flight physical was taken January 4, 1964. The last First Officer proficiency check was given by Capt. M. D. Johnson, Assistant System Chief Pilot on 19 October 1963 and was rated good.

Civil Air Transport Company Limited