

No. 32

Pan American World Airways, Boeing 377, N 1023V, landing accident at  
Manila International Airport, The Philippines, on 2 June 1958.  
Report released by Civil Aeronautics Administration,  
Department of Public Works and Communications,  
Republic of The Philippines.

Circumstances

The aircraft was on a scheduled flight from San Francisco, California to Singapore with numerous intermediate stops including Manila, The Philippines. It carried a crew of 8 and 49 passengers including one infant. At 2123 hours (1 June) GMT \* the aircraft landed on Runway 06 at Manila. During the landing roll, the main landing gears of the aircraft collapsed. The aircraft skidded and swerved to the right until it finally settled on the right shoulder of the runway approximately 2850 ft from the west end and 27 ft from the edge of the runway. One of the blades of No. 3 propeller flew off and penetrated the cabin area causing the death of one passenger and seriously injuring another. The aircraft was seriously damaged.

Investigation and Evidence

The aircraft arrived within the Manila area at approximately 2032 hours, and a clearance was issued by the Manila Tower to approach Rosario Homer at 5 000 ft. At 2112 the aircraft reported over Rosario Homer at an altitude of 3 000 ft in-bound on a straight-in approach to Runway 06 at Manila. The aircraft arrived over the Manila VOR at 900 ft and was too high for the landing, hence, a right turn was executed by the pilot-in-command for a circling approach. A

landing was not made on the second approach because the captain believed that it would result in an uncomfortable rate of descent and flight manoeuvre to align the aircraft with the runway. So the pilot elected to make another right turn. On the third attempt the aircraft came in for landing with full flaps with an indicated airspeed of 130 mph. Touch-down was made on the two main wheels, wings level and with the nose a little bit high off the ground. Immediately thereafter, the aircraft started to settle on its right wing until No. 3 and No. 4 propellers began striking the runway. The aircraft skidded and swerved to the right. The pilot tried to hold the aircraft on the runway by using the left brake, left rudder and the steering wheel with no positive results. The swerving continued until the aircraft settled to a stop on the right shoulder of the runway.

The terminal forecast issued by the Tokyo Meteorological Office for Manila and Clark on the time of the estimated arrival of the aircraft in Manila was as follows:

2100 to 0700 hours: 2 500 ft scattered, occasionally broken, 10 000 ft broken, variable overcast, 25 000 ft overcast, visibility 15 miles, occasionally 6 miles in scattered rain showers. Wind southwest 5 knots, freezing level 16 000 ft.

---

\* All times given in the report are GMT which is 8 hours earlier than Manila local time. ( The accident occurred on 2 June at 0523 hours local time. )

The latest weather report given to the aircraft when en route within the Manila area was as follows:

2100 hours: Est. 1000 overcast, visibility 2, temperature 75, dew point 75, alimeter setting 29.75, wind E-4, thunderstorm and rain.

The meteorological conditions existing at approximately the time of the accident were cloud - 1 000; visibility 2 miles; wind NW 7 to 8 knots. Actual rainfall as recorded was two inches.

The crew testified that during the final approach and landing they encountered heavy rains and overcast condition. Nevertheless, they stated that they had a full view of the runway and its lights.

Examination of the aircraft disclosed no evidence that the aircraft or its landing gears had struck any object prior to the touchdown. The wing flaps were symmetrical and in the "down" position. All flight instruments were in operating condition. Tests conducted on the brakes showed normal operation. The main landing gears had collapsed and folded up into the wheel wells. The nose gear did not retract but was sheared off when it plowed into the runway shoulder.

The settings of Nos. 1, 3 and 4 propellers were found to be at full low pitch. The No. 2 propeller was found to be 2° from the low pitch stop.

Subsequent inspection of the main landing gear and nose gear actuating mechanisms revealed that the main landing gears and nose gear were in the down and locked position. Failures were found in the structural supports of both main landing gears confined to the structure supporting the forward ends of both

the "V" strut and retracting screw which were believed to have occurred at, or soon after, touchdown. The failures at the "V" strut support were primarily at one leg of the "V" strut and in a forward direction, allowing the apex of the "V" strut to move forward and inboard. The failure of the screw support allowed the screw to move aft. The "V" strut support failure is believed to have occurred first or almost simultaneously with the screw support failure. If the screw support had failed first, the "V" strut support failure would not have occurred at all. No evidence of fatigue or incipient defect was found. The failures noted were of typical tension type resulting from impact forces. The extend-retract screw jack of the right-hand landing gear was found in the fully extended position, but the electrical circuit of one of the three green lights associated with the retracting mechanism of the right main gear was damaged, causing the red light to be on.

The captain testified that the landing gears were down and locked as indicated by the three "green L. G. position lights" which were "on" during the initial and final checks. He stated that the landing, however, was a little bit harder than normal.

The first officer and flight engineer, who were in direct view of the instruments' panel, testified that on the final roll of the aircraft, after two or three seconds, they saw that one of the three "green L. G. position lights" went "off". Simultaneously, a "red L. G. position light" went "on" and the warning horn sounded. Thereafter, the aircraft began to settle to the right.

The flight engineer further stated that he noticed the aircraft bounced thrice. After the red light indicator illuminated he shut off the electrical switches and fuel shut-off valves.

Crew Information

The pilot-in-command had logged a total flight time of 12 495:33 hours with 5 466:31 hours on the B-377, of which 642:58 hours had been logged as pilot-in-command. Hours flown during the flight which ended in the accident were 12:36. The pilot was route qualified on the Wake-Manila route but had not flown

into Manila for a period of two months preceding the accident.

Probable Cause

The hard landing of the aircraft caused the failure or collapse of the right main gear "V" strut support.

Contributing factors were the heavy rains and gusty wind.

-----

N 1023 V ACCIDENT  
 MANILA INTERNATIONAL AIRPORT  
 2 June 1959 at 0523 hours

FIGURE 23

