

No. 2

Empresa Servicio Aereo de Honduras (SAHSA), DC-6, provisional Honduras registration HR-SAS, accident at Toncontín International Airport, Tegucigalpa, Honduras, on 20 February 1967. Report released in 1967 by the Directorate General of Civil Aeronautics, Honduras

1.- Investigation1.1 History of the flight

Flight 203 was a scheduled domestic flight from La Mesa Airport, Cortés Department, to Toncontín, Tegucigalpa, D.C., with three flight crew members, two stewardesses and fifty passengers on board. The gross weight of the aircraft at take-off was 75 023 lbs. After a routine pre-flight check which did not reveal any abnormality, the aircraft took off from La Mesa at 0815 hours. Its estimated flight time was 32 minutes and the en-route altitude was 7 500 ft. After 23 minutes of flight the aircraft contacted Toncontín control tower over "El Rancho" and requested authorization to use frequency 118.1 Mc/s. This was acknowledged by the tower which cleared the aircraft to enter the circuit for a landing on runway 01, the wind being calm. The crew then requested to use runway 19 but the tower refused because there was some traffic on runway 01 and several aircraft were waiting to land on that runway. The landing was initiated, 20° of flaps and the undercarriage were lowered; the pilot reported on base leg and extended the flaps to 30°. According to the flight crew the indicated airspeed was 100 kt over the fence located before the threshold of runway 01. The landing was normal and smooth and immediately after the nose-wheel touched down the pilot-in-command called for withdrawal of the safety lock of the propeller reverse system. This was done; however the throttle controls would not shift to the desired position (rearward) to operate the propeller reverse system satisfactorily. Three consecutive attempts were made without success. The pilot evaluated the situation and, since the aircraft had passed the point where a go-around could be attempted, he decided to use the brakes only as they appeared to operate normally at the time. According to some reliable observers (aviation mechanics and tower controllers) one of the aircraft's tires burst approximately halfway down the runway and another tire, possibly on the opposite side, burst 50 m farther down. It was assumed that these tires were the two outermost tires. As the aircraft was nearing the end of the runway, the pilot-in-command became afraid of the pronounced slope ahead (see Fig. 2-1) and veered to the left to execute a 180° turn (ground loop). The turn was successfully completed; however, due to the aircraft's inertia, the radius of the turn was too wide and the nose-wheel ran into a drainage ditch; the aircraft then skidded, the left undercarriage ran into the same ditch and stayed in it, the nose-wheel broke off, the left wing fuel tanks burst and the propellers of Nos. 1 and 4 engines were damaged. A fire resulting from the intense heat of the brakes and wheels, the spilled fuel and the dry grass immediately broke out and destroyed the aircraft.

## 1.2 Injuries to persons

Injuries	Crew	Passengers	Others
Fatal		4	
Non-fatal			
None	5	46	

The pilot-in-command saw that all the passengers had left the aircraft, those who died were found by the rescue team outside the aircraft.

## 1.3 Damage to aircraft

The aircraft was destroyed by the fire that followed the accident.

## 1.4 Other damage

No other damage was caused.

## 1.5 Crew information

The pilot-in-command, aged 41, held an airline transport pilot's licence No. 6 with single-engine, twin-engine, multi-engine and instrument instructor ratings issued by the Honduran DGCA, dated 14 June 1965, authorizing him to pilot DC-6 aircraft. He had logged a total of 13 128:26 flying hours, including 682:17 hours on DC-6 aircraft. His most recent medical examination was made by the authorized doctor on 18 October 1966.

The co-pilot, aged 31, held a commercial pilot's licence No. 163 issued by the DGCA on 14 March 1958. He had logged a total of 5 799:21 flying hours, 206:39 of them in DC-6 aircraft. His most recent examination was on 25 October 1966.

The flight engineer, aged 50, held a flight engineer's licence No. 386 issued by the DGCA on 2 September 1965, with a mechanic class "A" rating No. 385 and a private pilot rating No. 180, dated 18 October 1958. His flying experience totalled 577:53 hours including 202:35 hours on DC-6 aircraft.

Also aboard were 2 stewardesses who had been trained by SAHSA.

## 1.6 Aircraft information

DC-6, serial No. 42894, provisional Honduran registration HR-SAS. Leased by SAHSA from Miami Aviation Corporation\*. It had flown a total of 48 871:35 hours, including 2 915:35 hours since the last major overhaul.

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\* The Spanish report actually says: ... leased by SAHSA to Miami Corporation. According to the title it was believed that this was in error and it was corrected.

The aircraft was equipped with R2800:CB 16 engines and 43E60 type 6895A-8 propellers. According to the records all other components were in conformity with United States laws and with Honduras airworthiness regulations under the revised legislation. The certificate of airworthiness was valid until 20 August 1967. All the proper overhaul and maintenance had been carried out, and the operational records did not mention any discrepancies that had not been corrected.

Gross weight on take-off from La Mesa airport was 75 023 lb and on landing at Toncontín 73 693 lb. The C of G was within permissible limits.

The aircraft was carrying 1 200 gallons of Esso 100/130 Octane fuel.

#### 1.7 Meteorological information

Weather conditions had no bearing on this accident.

#### 1.8 Aids to navigation

All ground aids were operating properly.

#### 1.9 Communications

The crew was in contact with the Toncontín tower controller and at 1442 hours they received the following instructions: "HR-SAS continue approach to runway 01. - Traffic one PA-28 Piper type aircraft on short final continue as No. 2 follow the Piper on final". The pilot acknowledged. The accident occurred a few minutes later.

#### 1.10 Aerodrome and ground facilities

Toncontín had an asphalt runway 1 800 metres (5 908 feet) long, and 45 metres (150 feet) wide; its elevation was 996.938 metres (3 270 feet). Drainage ran parallel to the runway and along its north side and was still under construction and not covered.

#### 1.11 Flight recorders

Not mentioned in the report.

#### 1.12 Wreckage

After the nose-wheel had collapsed, the left main landing gear ran into a ditch approximately 7 feet deep which prevented the aircraft from continuing its roll; the left wing broke apart, coming to rest on the edge of the ditch, subjecting the fuselage to stress and considerable damage. The fracture probably occurred at the mid section joint and the fuel leaked out there, causing the fire in the manner described above. All components remained in their respective positions, including the wheels and the main landing gear assemblies which remained fully lowered as well as the flaps. The propeller blades showed severe impact marks, the most seriously damaged being Nos. 1, 3 and 4. The engines were not dislodged but the cowling and some cylinders and accessories were damaged by the fire. Fire also reached the wings, but the outer right wing tank was still intact and containing fuel. The tail unit remained intact as did also the nose, the radar therefore not being damaged in any way.

### 1.13 Fire

Immediately after the aircraft was damaged as a result of the nose-wheel collapse and of the skidding on the left main wheels into the drainage ditch, a fire occurred and destroyed the aircraft. The fire resulted from the spilling of the fuel from the left wing over the tires and brakes which were excessively hot due to the extreme braking, the dry grass around the ditch helped the fire to spread. Neither the airport nor the Air Force fire fighting equipment could be used because they were not in working condition. The City fire brigade arrived some 15 minutes after the fire had started and completely extinguished the fire.

### 1.14 Survival aspects

See paragraph 1.2.

### 1.15 Tests and research

None mentioned in the report.

## 2.- Analysis and Conclusions

### 2.1 Analysis

a) The marks left by the wheels before initiation of the 180° turn indicated that the pilot did use the brakes during the landing roll, and made a fairly open turn up to the moment the aircraft came to rest in the ditch at an angle of almost 160°. Had this obstacle not existed, the aircraft would have completed the manoeuvre normally since no structural failure had occurred as yet.

b) The pilot had not attempted a go-around, since the aircraft was at a critical point and below the necessary speed.

c) Several witnesses saw two of the aircraft tires burst and saw the characteristic smoke caused by friction of the tires upon landing impact or application of brakes.

d) It was established that the engines were operating at low speed and the landing run also was slow and normal.

e) The pilot did not activate the emergency system because there was no pressure loss and he had the aircraft under control during the roll.

f) The pilot executed the correct manoeuvre because otherwise the aircraft would have continued down the slope at the end of runway 01. This might have cost the life of all the passengers and crew members, and people nearby.

g) It was not possible to identify the defect in the reverse pitch control mechanism during the investigation since the cockpit, where some clues might have been found, had been totally destroyed by the fire.

## 2.2 Conclusions

### Cause or Probable cause(s)

According to the reports of the crew, the probable cause of the accident was the failure of the reverse pitch control mechanism. The Board was not able to confirm or deny this because the fire had obliterated all traces of any possible cause.

## 3.- Recommendations

The Accident Investigation and Inquiry Department recommends the following:

- 1) All drainage ditches on either side of the Toncontín runway to be covered over.
- 2) Aerodrome to be provided with the essential fire fighting equipment and trained personnel.
- 3) Grass and weeds around the runway to be cleared away.
- 4) Houses in the vicinity of runway 01/19 to be demolished and construction of houses in this area to be prohibited.
- 5) Access to runway 01/19 to be prohibited and trespassers living in the vicinity to be punished or fined.

Scheduled domestic Landing Ground loop Power plant - propeller and propeller accessories
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ACCIDENT TO DC-6 PROVISIONAL HONDURAS REGISTRATION HR-SAS, OF EMPRESA SERVICIO  
AERO DE HONDURAS (SAHSA), AT TONCONTIN INTERNATIONAL AIRPORT  
TEGUCIGALPA, HONDURAS, ON 20 FEBRUARY 1967

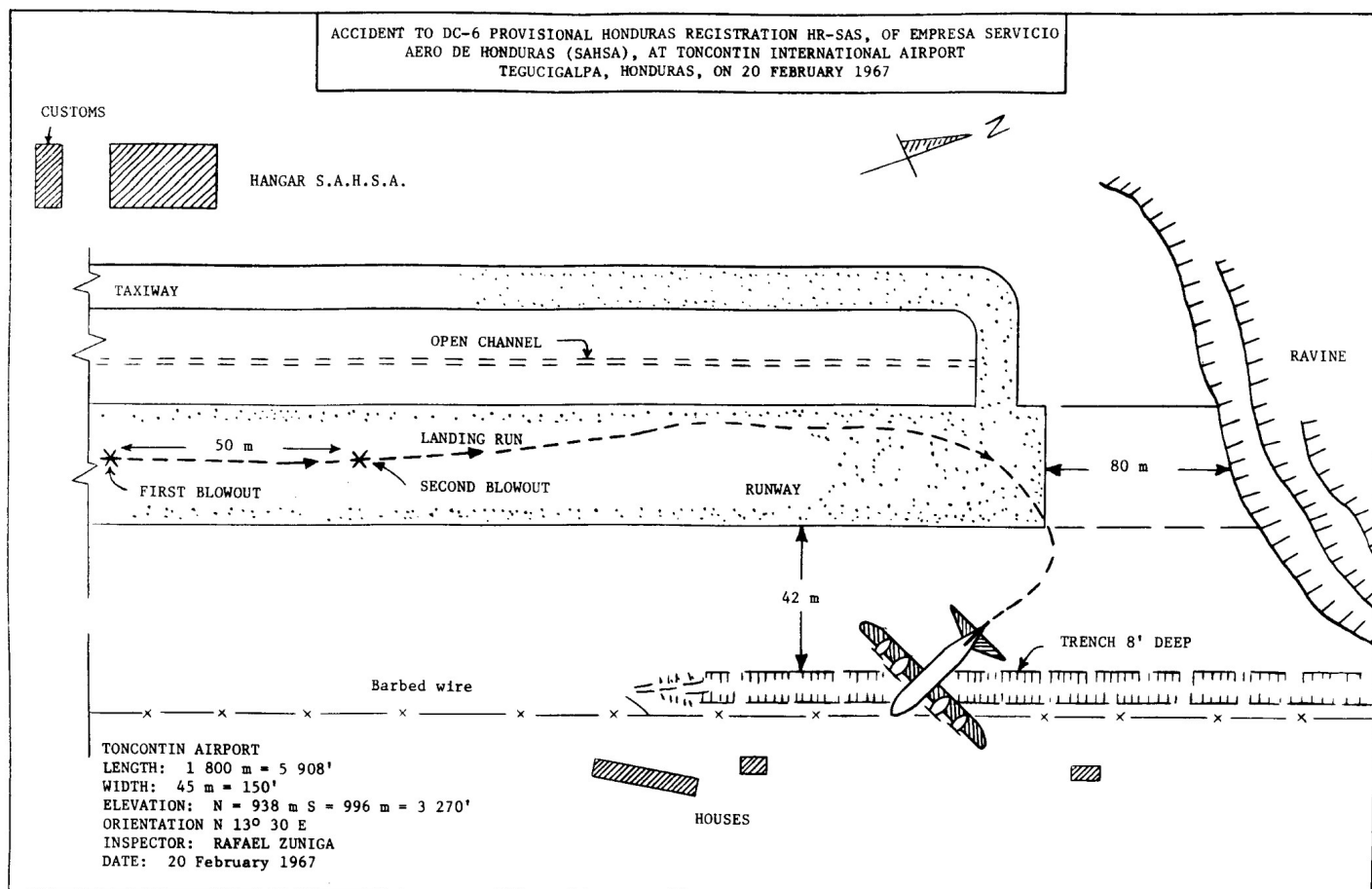


Fig. 2-1