

Belize Aircraft Accident and Incident Investigation Unit

Report No.:

A-003-05-1990

Name:

Accident Investigation

Final Report

Registration:

V3-HDY

CESSNA 206

28TH May 1990

PELICAN BEACH AIRSTRIP

STANN CREEK DISTRICT, BELIZE C.A.

Elaborated by: BDCA INVESTIGATION TEAM

Unit: Belize Aircraft Accident and Incident Investigation Unit

Approved by: Minister responsible for Belize Aircraft Accident and Incident Investigation Unit

Publication date:

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Operator: Maya Airways, 6 Fort Street, Belize City, Belize
Aircraft: Type: Cessna U206G
Model: Skyhawk
Nationality: Belize
Registration: V3-HDY
Place of Accident: Pelican Beach Airstrip
Date of Accident: 28th May, 1990

All times in this report are local

SYNOPSIS

The accident was notified to the Control Tower by Maya Airways at 7:24 a.m. the 28th May 1990 by telephone.

An Inspectors investigation into the operation aspect was carried out commencing with a visit to the site that same morning. The aircraft was engaged on a Maya charter flight departed from Belize Municipal Airstrip to Pelican Beach at 6:30 a.m. There were three passengers and one pilot on board.

During the landing roll, immediately after touch down, the aircraft began drifting to the left. The aircraft continued running off the runway and dipped into a 5' deep ditch. The nose wheel having sheered its stop pin had turned some 75° to the right. In this position, when it struck the soft edge of the ditch, it arrested the aircraft somewhat, but with its momentum, this arresting action acted as a pivot point and the aircraft tail section and main gears lifted up and the aircraft flipped over on its back and a little to the left and came to rest on its back but at an angle to the horizontal being held up by tall bushes. There was no fire and so far two passengers have complained of minor injuries.

The report concludes that the accident was caused by the aircraft leaving the runway and dipping into a low land area just outside the strip.

Recommendations are made with respect to the establishment and maintenance of aerodrome standards.

1. FACTUAL INFORMATION

1.1. History of the flight

V3-HDY is one of the two Cessnas operated by Maya Airways.

On 28th May, 1990 the aircraft crewed by one pilot and three passengers took off from the Municipal Airport enroute to Pelican Beach at 6:30 a.m. At about 6:55 the aircraft touched down at Pelican Beach Airstrip. Immediately after touch down the aircraft began drifting to the left leaving the runway completely about 800 ft. from the threshold. At about 400' more down the runway the aircraft dipped into an embankment about 5' deep. Despite the efforts of the pilot pressing the right rudder the aircraft continued drifting to the left until it went down the embankment.

The nose gear went down in the muddy embankment and arrested the aircraft. The momentum of aircraft flipped it over on its back and a little to the left with the right wing hitting the ground first. The aircraft came to rest at an angle to the horizontal, the nose some 30' from the edge of the runway at the bottom of the embankment the cockpit half immersed in water and the tail end resting on tall grass and bushes. The horizontal axis of the aircraft was at about 20° E of North.

There was no fire. The occupants were left hanging up-side down in the aircraft being held by their seat belts. They were able to leave the aircraft on their own.

1.2 Injuries to Persons

Injuries	Crew	Passengers	Others
Fatal	0	0	0
Serious	0	0	0
Minor	0	2	0
None	1	1	0

1.3 Damage to Aircraft

The aircraft suffered substantial damage to wings and propeller and right flap.

1.4 Other damage

None

1.5 PERSONNEL INFORMATION

Commander: Male [REDACTED]
Age: 23 yrs
Licence: FAA 262-[REDACTED]
Belize Validation [REDACTED]
Aircraft Ratings: Single Multi-engine Instrument
Last Medical exam: [REDACTED], 1989
Last Certificate of test: Company base check May 1990
Total flying experience: 688 hours
Total flying experience in C-206: 3.6 hours
Total flying in last 28 days: 60 hours
Rest period: 12 hours

1.6 Aircraft Information

1.6.1 Details of the aircraft

V3-HDY is a Cessna U206G

Date of Manufacture: 1979

Certificate of Airworthiness: In the Public Transport Category valid until 30th November, 1990.

Certificate of Registration: The aircraft is registered in the name of Maya Corporation Ltd. on 12th November, 1981.

Certificate of Maintenance: The aircraft is maintained to an approved maintenance schedule MAW/C206/Iss/1. The certificate of maintenance was issued on 26.6.90 (valid for 50 hrs.)

Total Airframe Hrs: 7352.3

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Total Engine Hrs:	132.0 up to May19, 1990
Total hrs. since last check:	99.6 hrs.
Maximum permissible landing weight:	3,450 lbs.
Landing weight at time of accident:	2,500 lbs.
C of G	43.6 aft of Datum.
C of G at time of accident:	within limits

1.7 Meteorological Information

The meteorological conditions were good with calm wind and good visibility.

1.8 Aids to Navigation

Not applicable

1.9 Communication

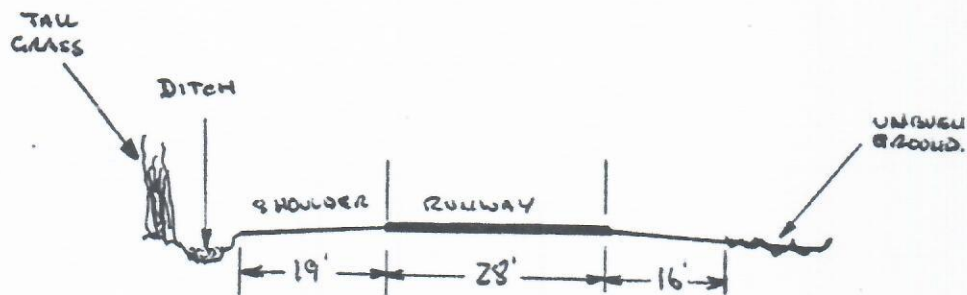
The aircraft's Emergency Locator Transmitter (FLT) was not activated by the accident.

1.10 Aerodrome & Ground Facilities

The Pelican Airstrip is a Government owned aerodrome with the Civil Aviation Department being held responsible for its upkeep and maintenance. It is situated on the NNW side of Dangriga Town (Position 16.59N. 88.16W) 1 mile away to provide a terminal for domestic schedule services, general aviation and private operators in Belize.

The runway orientated 09/27 is 2200' long and 28ft wide. The cleared strip should go to 100' on either side of the runway centre-line cleared and graded, to be capable of supporting the weight of aircraft using the aerodrome to permit immediate recovery of aircraft inadvertently leaving the runway as is the subject of this report.

The Pelican Airstrip extends to 19 and 16 ft. on either side of the runway centreline, and then dips down dangerously beyond these measurements. A cross section profile is as shown:



There are no air traffic control or flight information facilities, no radio navigation aid and no immediately available crash/rescue service.

1.11 Flight Recorder

No flight recorder was fitted nor is required to be fitted.

1.12 Examination of the aircraft and Accident Site

The first witness mark could be seen where the left main tyre left the runway some 600' from the threshold of runway 09. A witness on board the aircraft reported that the right main gear touched down on the centre of the runway which meant that the aircraft touched down on the left half of the runway. Another witness reported that the nose gear took long to touch earth. The pilot therefore lost some degree of control in the steering of the aircraft. About 800' from the threshold all three wheels were completely off the runway and on the slight incline. The pilot was pressing for right rudder but the aircraft did not respond due to the inclined attitude and the grass surface. Four hundred feet further the nose wheel struck soft earth on a steeper incline. The sudden impact caused the nose wheel to shear its stop pin (the limit for steering) and turn it to an angle of 75° to the aircraft's longitudinal axis. In this position rolling action was suddenly changed to breaking action. The nose wheel in digging down in the soft earth now became a pivotal point causing the aircraft tail section and main gears to leave the earth. The landing speed of the aircraft was high (60-65 kts.) due to the no wind factor. This gave the aircraft a greater momentum .

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The whole aircraft lifted off the earth in its flip with the right wing hitting the embankment first, and the aircraft coming to rest with the nose at the bottom of the ditch and the tail resting on tall grass. The attitude was wheels in the air with the aircraft at an angle of 30° to the horizontal and about 20° E of North.

- 1.12.2 Four feet of the right wing tip was bent backwards and wrinkled. The right flap at the end adjacent to the fuselage was crumbled causing the right rear door to jam. The wind-shield was broken across and down the middle. The right door glass window was broken. The propeller blades were bent back in a curve of about 45° showing there was power when the nose wheel dipped into the soft earth. A check of the pedals, after the aircraft was removed and put on hard standing ground, shown nothing wrong with the connections and the rudder moved freely. The nose wheel had turned through an angle of some 75° on a swivel to the right sheering to stop pins which is a guide to the limit that the nose wheel should turn on steering when the aircraft is rolling.
- 1.13 Medical and Pathological Information
Not applicable
- 1.14 Fire
There was no fire.
- 1.15 The accident was survivable. On Flipping over all were held in their seats by their seat belts, but suspended up-side down. The male passenger behind the pilot was first out of the aircraft by opening the glass window of the pilots door. He stepped out on the underside of the left wing. He then opened the door and helped out the pilot and the lady passenger who was seated beside the pilot. The other male passenger also got out on his own. They all climbed on the underbelly of the aircraft and then jumped to firm earth.
- 1.16 Test and research
None
- 1.17 Additional Information
The aircraft was parked on the apron at Pelican Beach on Saturday 2 June, 1990 after being dragged from the accident site. During the night persons unknown stole the engine from the aircraft.

They also ripped out the Emergency Locator Transmitter (FLT) from its housing causing a ragged hole in the right side of the fuselage. They also cut the two main tyres. The Dangriga Police are investigating the theft.

1.18 New Investigative Technique

None

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3. CONCLUSIONS

(A) Findings

- (1) A deep ditch lies on the north side of the strip. Its presence is not noticed due to the high overgrown grass and bush.
- (11) The commander was properly documented to undertake the flight as it was planned.
- (III) The certificate of Airworthiness was current at time of the accident.
- (IV) The accident occurred following the departure from the runway of the aircraft.
- (V) The aircraft flipped over on its back when its momentum carried it with the nose as a pivotal point.
- (VI) The aircraft was substantially damaged after it flipped over on its back.
- (VII) Had the runway strip been wider with no ditch, cleared and graded as required for a licenced aerodrome this happening would have been an occurrence rather than an accident.
- (VIII) There was no malfunction of the rudder system.

(B) CAUSE

The accident was caused by the aircraft hitting a steep embankment of soft earth. A contributing factor was failure of the commander to properly align his aircraft with a narrow runway.

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4. SAFETY RECOMMENDATIONS

It is recommended that

- 4.1 The Pelican Airstrip be widened to 100' with a 40' runway and the sides and approaches be cleared of any obstructions.
- 4.2 Company Policy be changed to reflect a higher number of hours on type before new recruits are released to captainship.


INSPECTOR OF ACCIDENTS

Civil Aviation Department
Belize

June, 1990