

MINISTRY OF COMMUNICATION AND TRANSPORT

ACCIDENT INVESTIGATION BRANCH

CIVIL AIRCRAFT ACCIDENT NO. CAV/ACC/14/96

**REPORT ON THE ACCIDENT TO CESSNA U206G
AIRCRAFT REGISTRATION NO. 5H-DTD WHICH OCCURRED
ON 19 JANUARY 1996 AT RAS KUTANI AIRSTRIP 28 KM
BEARING 105° FROM DAR ES SALAAM
INTERNATIONAL AIRPORT
TANZANIA**

AIRCRAFT ACCIDENT NO. CAV/ACC/2/96

Aircraft type : Cessna U206G

Nationality and Registration Marks : Tanzania, 5H-DTD

Engines : One Continental IO 520 F13B

Operator : DT Dobie Holdings Ltd.
P.O. Box 1192 Dar es Salaam
Tanzania

Crew : Pilots One - Uninjured
Passengers One - Uninjured

Place of Accident : Ras Kutani airstrip 28 km south bearing
105° from Dar es Salaam International
Airport (S06 57 47 E039 30 18)

Date : 19 January 1996

Time : 0905 hours

ALL TIMES UTC

SYNOPSIS

On 19 January 1996 at 0830 hours 5H-DTD took off from Dar es Salaam International Airport for a flight to Ras Kutani. It was carrying one pilot and three passengers. The flight to Ras Kutani was uneventful. After touchdown on runway 16 the aircraft became airborne again. It finally regained the runway just towards the end of the runway and the aircraft could not be stopped within the remaining length of the runway. As 5H-DTD overshot the runway the pilot kicked the right rudder and the aircraft rotated clockwise through 90° (on the ground) and skidded into a ditch located just beyond the end of the runway where it came to rest. Two occupants sustained minor injuries but the aircraft was substantially damaged.

It is concluded that the accident was caused by the aircraft crashing into a ditch located just beyond the end of the runway. The failure of the pilot to reduce speed and stabilize the aircraft before touchdown was a major contributory factor.

1. FACTUAL INFORMATION

1.1 History of the flight

On 19 January 1996 at 0850 hours a six-seater single engined Cessna U206G with Tanzania registration marks 5H-DTD took off from Dar es Salaam International Airport for a flight to Ras Kutani airstrip. It was carrying one pilot and three passengers. The pilot said that the flight to Ras Kutani was normal. As he approached the airstrip he noticed from the windsock that the wind was variable and gusty. The general direction of the wind was at right angles to the runway. He chose to land on runway 16.

The passenger in the co-pilot seat, who was also a pilot, said that they approached right base of runway 16 at 100 m.p.h. with 10° flap and turned sharply for landing. Just before touchdown the pilot selected 20° flap. According to the passenger, the aircraft subsequently floated past the aiming point (which was the threshold of runway 16) and touched down when it was abeam the windsock (which was located half-way down the runway). 5H-DTD bounced on touch down and when it had regained the runway there was negligible braking because most of the aircraft weight did not seem to be on the landing gear. As the aircraft went on the downhill slope near the end of the runway the pilot kicked the right rudder and the aircraft rotated through 90° while its own inertia forced it to skid in its original direction on its three main gears. The aircraft subsequently ploughed into a ditch located just beyond the end of the runway. As it did so the left main gear fractured and the left wing and the propeller struck the ground. The aircraft came to rest at the end of the runway at right angles to the centre-line.

There was no fire and two passengers escaped without any injuries. The pilot and one passenger sustained minor injuries.

1.2 Injuries to persons

INJURIES	CREW	PASSENGERS	OTHERS
Fatal	-	-	-
Serious	-	-	-
Minor/None	1	3	-

1.3 Damage to aircraft

The aircraft sustained substantial damage to its left wing, the left wing main landing gear and the propeller.

1.4 Other damage

There was no third party damage.

1.5 Personnel information

The pilot Capt. Shaban Kaikai was born on 11 November 1968 at Dar es Salaam, Tanzania. He held a Commercial Pilots License No. HP-376 granted on 30 April 1992. He also held a Flight Radio Telephony Operator's License No. H-669 granted on 30 April 1992 which was kept in line with his CPL. By the time of the accident his license was valid up to 25 May 1996.

He had the following ratings on his license:

Group 1

Cessna 172, 206

Group 2

Cessna 310

On the day of the accident the pilot had logged 1263 hours most of which were on Cessna 206.

1.6 Aircraft information

The aircraft, a Cessna U206G Serial No. 05362 powered by one Continental IO-520F13B was manufactured by the Cessna Aircraft Company at Wichita, Kansas, U.S.A in 1979.

It was first registered in the country on 13 March 1986. A Certificate of Registration No. 299 was issued in the name of Mr. DT Dobie P.O. Box 30160 Nairobi. The ownership was subsequently changed to DT Dobie Holdings Ltd. P.O. Box 1192 Dar es Salaam on 4 February 1992.

A Tanzania Certificate of Airworthiness No. 253 was issued on 23 May 1986 to expire one year later. The aircraft C of A had since been kept current through periodic renewals. By the time of the accident the C of A was valid till 15 February 1996. The aircraft was being operated in the Public Transport Category.

1.7 The Weather

There was no weather station at Ras Kutani. Reports from passengers and eye witnesses said that at the time of the accident it was a bright sunny day with temperatures about 30°C. They also reported that there was a strong wind which was variable and gusty.

1.8 Aids to navigation

Not applicable.

1.9 Communications

Not applicable.

1.10 Aerodrome information

Ras Kutani airstrip is located 28 km south of Dar es Salaam along the coast. There is one runway (16/34) which is 1,000 long metres and is almost parallel to the coast line.

Pilots who frequently use the airstrip have complained of cross winds which persistently blow from the sea. These winds sometimes reach gust levels.

The runway surface is hard soil with loose gravel. There is a downward slope towards the end of runway 16.

There have been further complaints from pilots using Kanyegwa airstrip which is located in the vicinity of Ras Kutani whose runway direction is (01/19) while the direction of Ras Kutani runway is (16/34).

In the absence of a Control Tower, the conflicting approach paths for the two runways represent a potential source of danger to aircraft operations in the area.

A report on the survey for the two airstrips in the area (Amani Gomvi) is contained in Appendix 1.

1.11 Flight recorder

Not required by regulations. None fitted.

1.12 Wreckage information

The wreckage was found resting on its three landing gears just beyond the end of the runway and at right angles to the runway centre-line.

The left main gear had fractured at the lower end and the lower portion including the tire had separated. The fuselage was also severely damaged around the left main gear attachment section. The nose gear was damaged at its fuselage attachment point. The right main gear did not show any evidence of damage. The damage to the landing gear was consistent with the aircraft sliding sideways (to the left) under its own momentum result of which all the three landing gears acted as brakes.

The left wing was bent upwards about three feet outboard of the lift strut indicating that the wing tip struck the ground when the left main gear fractured and dug into the ground.

One blade of the propeller was dislocated from the hub and another was slightly bent. The other blade was not damaged. This failure is consistent with the engine stopping when two propeller blades were stuck in soft soil.

1.13 Medical and pathological information

Not applicable.

1.14 Fire

There was no fire.

1.15 Survival aspects

This was survivable accident.

1.16 Tests and Research

Not applicable.

2. ANALYSIS

There was no evidence of any technical problem with the aircraft which could have contributed to the accident.

There was no quantitative information about the weather because there was no weather station at the airstrip. However, from the pilot and passenger statements, it was evident that there was a strong wind which was variable and gusty at the time of the attempted landing.

The pilot was reported to have turned sharply to the threshold of runway 16 after which he selected 20° flap. Given the prevailing winds at the material time it would have been prudent to make a flapless landing. The aircraft would also have been less difficult to land if he had first stabilized it and then approached the threshold at a shallower angle and lower speed.

When the aircraft ballooned after the initial touchdown the pilot should either have raised the flaps to destroy the lift or should have overshot and made a fresh attempt to land at the airfield.

It was evident from the aircraft tire marks that there was no effective braking after it had regained the runway most probably because much of weight was still on the wings.

There were signs of effective braking on the sloping end of the runway. This was however not sufficient to stop the aircraft because of the presence of loose gravel on the hard surface of the runway that remained at the time.

The decision by the pilot to kick the right rudder at the end of the runway prevented the aircraft from falling heavily on the lower ground straight ahead which could have resulted in a more serious accident. It also served to stop the aircraft in a short distance by using all the three wheels as brakes.

3. CONCLUSIONS

(a) Findings

1. The pilot was properly licensed to conduct the flight.
2. There aircraft documents were in order.
3. There was a strong and variable wind at Ras Kutani at the time of the attempted landing.
4. The pilot failed to reduce speed and stabilize the aircraft before touchdown.
5. The aircraft overran the runway and crashed into a ditch.

(b) Cause

The accident was caused by the aircraft overrunning the runway and crashing into a ditch. The failure of the pilot to reduce speed and stabilize the aircraft before touchdown was a contributory factor.

4. SAFETY RECOMMENDATIONS

It is recommended that:

- 4.1 Pilots should always avoid sharp turns or acts of daring manouvres in situations where there are no emergencies.
- 4.2 In view of the persistently strong cross winds reported at the Ras Kutani runway, consideration should be made to construct another runway in the direction which is frequently favored by the wind. The findings of the Government land surveyor's report should also be taken into account.
- 4.3 Due to the closeness of the two runways of conflicting directions in the Amani Gomvi area a separation procedure for approaching the two runways should be

designed.



J. Nyamwihura

INSPECTOR OF ACCIDENTS

Accident Investigation Branch
Ministry of Communications and Transport

Appendix 1

A REPORT ON SURVEY FOR THE TWO AIRSTRIPS AT AMANI GOMVI

AIMS: The aim of the survey was to know the orientation of the Kanyegwa airstrip relative to Ras Kutani airstrip (D.T Dobie).

METHOD: The traverses were run, basing on the pre-coordinated points (Registered with the Ministry of Lands) through centre points of either end of Ras Kutani airstrip and through the four corner points of Kanyegwa airstrip.

RESULTS: The closures of both traverses were within acceptable discrepancies hence properly co-ordinated points.

Both traverses were re-tied to known points as a check.

CONCLUSION: The two airstrips are not along the same course (not parallel).

The one at Ras Kutani which is 3km north-west of Kanyegwa airstrip runs at the bearing of $336^{\circ} 55'$ while the Kanyegwa runs at bearing of $09^{\circ} 06'$ making a difference of $32^{\circ} 11'$ in their courses.

Both airstrips have required full registration although some technical anomalies have been noted on the Ras Kutani airstrip as follows:

- i) The runway is not levelled properly and surroundings are not clear making a difficult vision.
- ii) The locality was poorly chosen as the elevation makes a difficult vision.

The survey was done by:

1. Mr. W. Rwelamira - Assistant Surveyor
2. Mr. J. Nyabange - Assistant Surveyor
3. Mr. M. Ngokoko - Assistant Surveyor

M.S. Ngokoko
M.S. Ngokoko
Surveyor Assistant

22/10/93