



THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF INFRASTRUCTURE DEVELOPMENT
ACCIDENT INVESTIGATION BRANCH

OFFICE OF THE MINISTER
ACCIDENT INVESTIGATION BRANCH
P. O. BOX 2819
DAR ES SALAAM

AIB Bulletin

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AIB Bulletin No. F2

Category: 1.3

Aircraft Type:

Serial No. 1512

No. & type of Engines:

Year of Manufacture:

Date and Time (UTC):

Location:

North

Zambia.

18.2"

Type of Flight:

Persons on Board:

Injuries:

Nature of Damage:

Probable write off.

Commander's Licence:

Commander's Age:

Commander's Experience:
were on type.

Information Source:
operator

Ref: CAV/ACC/F2/06

Cessna 185E **Reg.** 5H-ZOO

One Continental IO-520 D13B
1969

30 July 2006 at 1315 hours

3 km S.W. of Lubongo airstrip,

Luangwa National Park,

S 11 43' 39.2" **E** 32 07'

Rhino tracking

Crew -2

Crew -1 Serious, 1- Minor

Aircraft extensively damaged.

PPL (Expired)

46 years

855 hours of which about 800

Last 90 days 31 hours

Last 28 days 24 hours

Fax message from the

ALL TIMES UTC

History of the Flight

On 30 July 2006 at 1245 hours UTC 5H-ZOO took off from Lubongo airstrip in North Luangwa National Park, Zambia, for a rhino tracking mission. It was also destined to inspect water holes in the area in the due course. The aircraft was carrying one pilot and another crew member who was to conduct the inspection of the water holes.

The Bulletin contains facts relating to the accident which have been determined up to the time of issue. This information is published to inform the public and the aviation industry of the general circumstance of the accident at the preliminary/stage and must necessarily be regarded as tentative and subject to alteration or correction if additional evidence becomes available.

Short extracts can be published without specific permission providing that the source is duly acknowledged.

The Chief Technical Adviser of the North Luangwa Conservation Program said that 15 black rhinos had recently been brought into the Park from South Africa. One of the rhinos looked sick. The aircraft was working on a contract to observe the behaviour of the rhinos in the new environment.

He also said that 5H-ZOO was flying very low in order to inspect the water holes and at the same time it was tracking the sick rhino. When asked what standard height was used when carrying out such operations, he said that it was 700 feet above the ground level.

The pilot himself appeared for interview at the Tanzania AIB headquarters in Dar es Salaam on 8 September 2006 and reported that he had recovered sufficiently to report to his place of work. He also reported that he was a rhino expert in the region and a veterinary doctor. He was charged with the preservation of the black rhino, a specie that had been disappearing fast in many bushes in the recent years through poaching. One month before the accident, he was involved in an air lift of the black rhinos from South Africa to North Luangwa National Park in Zambia. These rhinos were being re-introduced in the country because they had completely disappeared.

The pilot testified further that when he was in Ngorongoro, Tanzania, on 29 July 2006 he was informed that one of the

rhinos taken to Zambia during his airlift was sick. He immediately flew to Seronera for refueling and took off for North Luangwa National Park, Zambia, on the morning of the following day. He arrived in Zambia at 1000 hours on that day and started searching for the sick rhino that afternoon.

On 30 July 2006 he prepared the aircraft for another flight. The purpose of the flight was to locate water holes in the western part of the sanctuary where most of the rhinos were concentrated. For this reason he was carrying another rhino expert who was on a mission to observe the water holes on the ground. He however, did not mention that he was conducting rhino tracking as well.

During the pre-flight checks the pilot observed that there was a little dirt in the fuel from both main tanks. He however considered the contamination was 'slight' and chose to go ahead with the flight.

Take off was initiated at 1300 hours and after two minutes the pilot switched tanks from right to left main tank where most of the fuel was. Fifteen minutes into the flight, when the aircraft was flying 150 feet a.g.l. at 65 mph with 20 degrees of flaps, the engine stopped without warning. There was no noise or disturbances associated with a stopping engine. Efforts to switch tanks and re-start the engine failed. The pilot subsequently executed a crash landing in the forest, doing every effort to avoid large trees.

The passenger was also reported to have said that he saw the pilot fumbling with various parts of the controls but, as he was himself not a pilot, he did not know what was going on. He realized that the aircraft was losing height and eventually crashed.

There was fuel spillage but there was no fire. Both occupants, though injured, disembarked and managed to walk to the camp fence at which point the pilot stopped to rest while the passenger proceeded to the Game Scout Camp to report the accident. The two were subsequently taken for treatment in a local hospital.

The pilot sustained head, chest and abdomen injuries. The injuries to the other crew member were minor. Both crew members were later taken to South Africa for treatment.

The flight to North Luangwa

The Zambia CAA reported that they were not aware of the presence of this aircraft in the country till when the accident was reported. This was because the aircraft entered the country without going through the designated entry point. It also entered the country without the necessary permit.

Enquiries conducted by the Tanzania Civil Aviation Authority established that 5H-ZOO took off from Seronera in Serengeti National Park, northern Tanzania, on 29 July 2006. It made a direct flight to North Luangwa National Park in Zambia, arriving at around 0900 hours. The duration of the flight was 4.6 hours and the cruising altitude was 6500 feet. Seronera is a designated entry/exit point. It was flying VFR in complete radio silence.

The Technical advisor at North Luangwa confirmed that 5H-ZOO had flown into Zambia on 29 July 2006 and landed at Lubongo airstrip without passing through a designated entry aerodrome.

The pilot himself said that he did not request for a permit to enter the Zambia airspace nor did he go through a designated entry point because he was in a hurry to attend the sick rhino. Asked why he did not raise the Dar es Salaam Area Control Centre or any of the en-route stations such as Tabora and Mbeya on his way to Zambia, he said that no station could be raised on the radio at his cruising altitude of 6500 feet.

Crew information

The pilot, a South African National, was born on 16 September 1960 at Umtale, Zimbabwe. He possessed a private pilot's license No. H-1097 granted on 16 August 2002 on the strength of his South Africa PPL No.0271006975 issued on 1 August 2002. He was qualified to fly Land Planes. He also possessed a Flight Radio Telephony Operator's License No. H-937 issued on 16 Aug 2002 in line with his PPL. In group A, he was qualified to fly single engine aeroplanes of less than 12,500lb maximum take off mass.

The pilot's license expired 13 August 2004 and had since not been renewed. He however, continued flying this aircraft both locally and internationally with the expired license. There was no explanation for not renewing his license.

Damage to the aircraft

The aircraft sustained extensive damage to both wings, the fuselage, the instrument panel, the propeller, the tail plane and the landing gear. Much of the damage occurred as a result of collision with trees.

The crash site

The aircraft came down in a depression some 65 metres beyond the top of a hill in a forest located about 3km south west of the Lubongo airstrip. The vegetation was that of a tropical rain forest with scattered bushes and large trees. At the area surrounding the crash site there was a hill followed by depression in the direction of flight. The aircraft went down in the depression and collided with trees.

The weather

The weather was reported to be good and is not considered as a factor in the accident.

The engine

The engine, a Continental IO-520-D13B Serial No. 816570-R was manufactured by Teledyne Continental Motors at Mobile, Alabama on 18 January 1999. By the time of the accident the engine had done 1153 hours. The pilot said that in the four years of his flying this aircraft, he had experienced no problems with the engine till the time of the accident.

He thought the reason for the engine stopping in flight was contamination of the fuel system with dirt or air in the fuel pipes. He had noticed some dirt in the fuel during fuel drain prior to flying. These particles in the fuel looked like rust or paint. After checking the tanks he was convinced that the particles were not enough to affect the system.

Regarding air in the pipes, the pilot was of the opinion that, as they were looking for water in the sanctuary, they were flying

slowly and he was often lowering one wing of the aircraft to get better visibility of the area below. He thought that the frequent lowering of the wing may have resulted in air being drawn into the fuel pipes and hence starving the engine.

Analysis

The pilot ascribed the accident to an engine problem. The passenger did not confirm this but he reported to have seen the pilot “fumbling with the controls” as the aircraft was descending. The damage to the propeller, which often gives an indication as to whether the engine was developing power at the time of impact, has yet to be assessed.

Although 5H-ZOO was conducting contractual aerial work, he was not following any approved procedure. The altitude, at which he was flying, 150 feet a.g.l, was too low for the manoeuvres he was doing. Even if the engine had stopped due to fuel starvation following the reported manoeuvres, it would have been unlikely to re-start the engine given the close proximity to the ground.

The most striking feature of this accident was that the pilot was able to fly for two years with an expired license. His private pilot’s license expired on 13 August 2004. He then conducted 420 flights and logged 460 hours (more than half of his flying experience), without renewing his license. He also flew to a foreign country without a permit and he did not go through a designated entry point.

Safety Recommendations

- This aircraft was able to fly 500 miles inside the country (from north to south, without detection. There is need for radar coverage of the entire Tanzania airspace.
- TCAA should reconsider the activities of private operators conducting aerial work in National Parks with the intention of regulating their operations.
- Pilots should take note of the dangers of flying low in their operations.

Further work

Arrangements are being made to retrieve the engine and the propeller from the crash site to the workshop in order to determine the reason for the engine stopping in flight.

Investigations will also be conducted into the operations of this operator with the intention of ensuring that they conform to the air navigation regulations.