



THE UNITED REPUBLIC OF TANZANIA
Ministry of Communications & Transport
TANZANIA CIVIL AVIATION AUTHORITY
ACCIDENT INVESTIGATION BRANCH

OFFICE OF THE MINISTER
ACCIDENT INVESTIGATION BRANCH
P. O. BOX 2819
DAR ES SALAAM
E-mail: tcaa@tcaa.go.tz
Website: www.aviationauthority.org

AIB Bulletin

AIB Bulletin No. 2	Ref: CAV/CC/2/05	Category: 1.2
Aircraft Type & Reg.	Cessna 208B Reg. 5H-PAF	S/No. 208-0754
No. & type of Engines:	One PT6 114A	
Year of Manufacture:	1999	
Date and Time (UTC):	3 March 2005 at 0950 hours	
Location: Airport	Nyamuhongoro Damp site, 9nm east of Mwanza Airport.	
Type of Flight:	Scheduled flight	
Persons on Board:	Crew - 1 Passengers - 9	
Injuries:	Crew - Nil Passengers - Nil	
Nature of Damage:	Damage to the fin and radio antenna	
Commander's Licence:	CPL	
Commander's Age:	38 years	
Commander's Experience:	9265 hours of which 2900 were on type	
	Last 90 days 134 hours	
	Last 50 days 50 hours	
Information Source:	Telephone call from the Operator	

ALL TIMES UTC

History of the flight

5H-PAF was operating Precisionair Flight PW 488 from Kilimanjaro to Mwanza with an intermediate stop at Shinyanga. The first sector of the flight was uneventful. The aircraft took off from Shinyanga for the flight to Mwanza at 0925 hours. It was carrying one pilot and 9 passengers and was flying under visual flight rules. The cruising altitude was FL065 and the estimated time of arrival at Mwanza was 0952 hours. At 0948 hours raised the Mwanza Tower and reported top of descent. He was given the relevant weather information and cleared to runway 30.

The pilot testified that when he was on the descending turn at 5500 feet (about 1700 feet agl) to position himself on final runway 30, he encountered a flock of scavenger birds (Marabou Storks) that numbered more than 10. He performed gentle turns and altitude changes in order to avoid them. As he did so, he suddenly saw one of the birds flying directly towards the windscreen. He immediately dipped the nose to avoid the imminent collision. However, the bird impacted the fin, causing an immediate yaw. He corrected this with a left rudder input. He also noticed that the ball on the turn and slip indicator had moved fully to the right. He tried to trim the rudder to return the ball to the normal position but the ball only traveled half the distance. The flap motor circuit breaker also tripped and was reset by the pilot. However, the approach to land was continued and

5H-PAF landed at Mwanza at 0956 hours.

Damage to the aircraft

Inspections on the airframe showed damage to the fin about four feet from the top. About one square foot of the skin on the port side of the fin had been torn open. Further examination of the fin damage showed that three leading edge ribs and one main rib were damaged. The main spar of the fin was found bent.

The bird strike

The bird strike occurred during descent when the aircraft was at about 1700 feet agl and 9 nautical miles from the airfield. It was flying below the clouds.

The accident area is above a fish waste dump site. Fish factories in Mwanza dispose their waste products at Nyamuhongoro dump site that is directly below the aircraft flight path for runway 12/30 of Mwanza airport. This dump site is a big attraction for scavenger birds.

There has been a number of bird strikes in the area. The corrective action taken was to bury the fish factory waste in the same area. This has since been implemented but the birds have successfully excavated the fish waste. They have also multiplied in appalling proportions. In 2002 the number of birds resting in the area was estimated at between 5 000 and 10 000. At the time of this accident the number of birds resting in the same area was estimated at between 100 000 and 200 000.

Marabou Storks

While there are a number of scavenger birds in the Nyamuhongoro area, including vultures, Marabou Storks represent the biggest potential source of danger to aircraft movements. This is because of their large numbers and the fact that the Marabou Stork is much heavier than the other bird species.

A male marabou stork can weigh up to 9 kg and stands up 1.5 metres tall. With a wingspan of 2.9 metres, it is one of the largest flying birds in the world.

The Marabou Stork is to be found throughout most of tropical Africa. They prefer open dry savannahs near large lakes or rivers. They are often found in around fishing villages, slaughter houses and rubbish dumps. The growing cities of East Africa, notably those around the great lakes, have of late attracted many of these birds because of the increasing loads of human waste. Indeed marabous save City Councils millions of shillings in garbage collection – an attribute which gives them a major economic value.

A Marabou Stork can eat up to 700 grams of garbage in one day. With an estimated population of 500 000 marabous around Mwanza, more than 300 tons of rubbish is cleared daily.

Bird Control Strategy

Previous practices of removing the birds from the Nyamuhongoro area through burying fish waste failed. The Mwanza Regional Health Officer promised to move the dump site to another area (Nyegezi) which is outside the aircraft flight path. He also said that fish

waste can be completely destroyed by incineration. As a matter of long term strategy, fish factories around Mwanza, he said, will in future, be required to incinerate all fish remains.

Bird strikes in the Mwanza area can be avoided by flying in the late evening hours or at night. Most of the birds tend to rest during night hours.



