



THE UNITED REPUBLIC OF TANZANIA  
MINISTRY OF COMMUNICATION AND TRANSPORT

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

ACCIDENT INVESTIGATION BRANCH

# AIB Bulletin

No:2/97

Ref. CAV/ACC/2/97

<b>Aircraft Type:</b>	Cessna 414,
<b>Registration:</b>	5H-COG
<b>Year of Manufacture:</b>	1978
<b>Date and Time (UTC):</b>	4.March 1997 at 0533 hours
<b>Location:</b>	29 n.m. SW of Dar es Salaam
<b>Type of Flight:</b>	Private
<b>Persons on Board:</b>	Crew - 1                      Passengers - 1
<b>Injuries:</b>	Crew -1 (Minor)              Passengers -1 (Minor)
<b>Nature of Damage:</b>	Damage to elevator trim tab
<b>Commander's Licence:</b>	CPL.
<b>Commander's Age:</b>	32 years
<b>Commander's Total Flying Experience:</b>	3120hours
<b>Information Source:</b>	AIB Field Investigations.

The aircraft was transporting a company official from Kihansi Airstrip, Iringa Region to Dar es Salaam. It took off from Kihansi Airstrip at 0418 hrs with one pilot, one passenger and 90 kg of cargo. The fuel endurance was 0230 hrs. The estimated time of arrival was 0548 hrs.

The aircraft climbed straight to FL 150 (15,000 feet) and cruised at this altitude for 43 minutes. After receiving a descent clearance from the Dar es Salaam Approach at 0532 hrs, the pilot initiated descent. The weather at the material time was reported by the pilot to be CAVOK throughout with no turbulence at all.

When 5H-COG was descending through FL 140 the aircraft rotated suddenly to a nose-high attitude of about 70 to 80 degrees to the horizontal. This sudden but violent rotation resulted in both the pilot and passenger being shot forward, heads down. The pilot immediately closed the throttles of both engines and started to push the control column forward in order to recover straight position. The aircraft did not respond. Instead, it went into a full stall followed by a spiral dive.

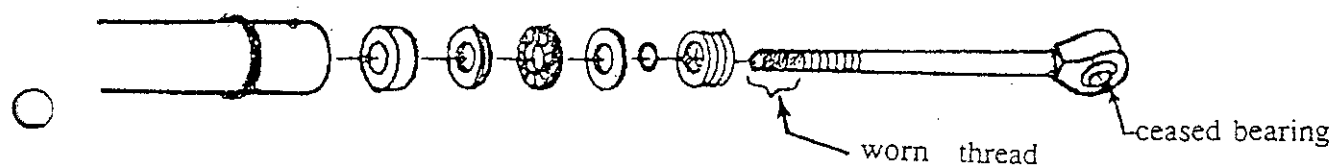
With the increase in speed the aircraft went back to a nose high attitude of about 50 degrees to the horizontal. The pilot, assisted by his passenger, applied "great force" to the control columns and as the aircraft passed 100 knots, they succeeded in holding it in level attitude.

In order to effect descent the pilot left the throttles at minimum power, lowered the landing gear, selected 15 degrees of flap and by applying a large force on the control column a rate of descent of 300 feet per minute was achieved. The pilot

subsequently declared an emergency. By this time he was 29 nautical miles from Dar es Salaam on radial 239 and descending through 13,000 feet. 5H-COG maintained a rate of descent of about 400 feet per minute and entered a hold at Dar es Salaam in order to lose attitude. The aircraft was successfully landed at Dar es Salaam International Airport at 0558 hrs. The occupants disembarked safely. However, the passenger had to receive treatment for stiff neck on the following day. The pilot also said that he applied neck massage later on that day of the incident. The neck injury was attributable to violent rotation in the incident.

- Examination of the aircraft showed that the right elevator tab had rotated and jammed in the "down" position in flight. It remained in this position for the rest of the flight. It could not be controlled from the cockpit. Further examination showed that there were no defects in the tab control cables and their routings. However it was found that the elevator trim tab screw

ELEVATOR TRIM TAB ACTUATOR



was dislocated from its housing. (See diagram above). It was also discovered that part of the screw thread on the tip end was completely worn out. The bearing on the eye end of the screw had also seized.

At 1624 hours the aircraft was requested to hold at Dar es Salaam to allow other landing aircraft while full emergency status was being instituted at the airport. At 1630 hours the pilot requested to make a low pass, so that someone could check if his landing gear was extended. The low pass was executed at 1632 hours. As it was already dark outside it was not possible to see the aircraft clearly and observe the position of the landing gear. At 1638 hours the pilot requested to come in for a belly landing as he was getting low on fuel.

The aircraft belly landed on runway 23, skidded on the Runway and finally stopped near taxiway W. The pilot and his passengers escaped unhurt but the aircraft sustained damage to both its propellers, both exhaust pipes, nose gear doors, nose wheel well from bulkhead, carry-thruspars, left inboard flap track, fuselage station 271.87, most of the avionics antenna, the pitot tube and several areas of the aircraft belly.

Preliminary investigation have discovered the rupture of the hydraulic output pressure flexible hose at its union on the hydraulic pump which led to complete loss of hydraulic fluid.

The circumstances to this accident are being investigated.