

completely destroyed and its debris was scattered along the wreckage trail.

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.

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EXAMINATION OF THE WRECKAGE

The aircraft came to rest 840 meters beyond the starting point. It settled on its belly on a on a grass hedge about 10 metres short of the eastern end of the apron and only 25 metres north of the ground fuels tanks. The baggage pod in the belly, which was empty, was crashed as it scraped the ground. The aircraft was resting on its belly, the landing gear having been retracted immediately after rotation.

The propeller strike marks of both engines were visible on the ground. The strike profiles together with damage in the direction of rotation show that both engines were rotating at considerable power at the time of impact. Both engines were found to have seized. Their mountings, support frames and casings were also found damaged. There was little damage to the flaps because they appeared to have been in the UP position. The left wing struck the ground in the accident sequence damaging the tip. There was no fuel spillage.

THE WEATHER

It was a bright sunny day with temperature 27 Degrees Celsius. The wind was 15kt north westerly and the due point was 17 Degrees Celsius.

WEIGHT AND BALANCE

The aircraft was carrying one pilot and six passengers. The baggage was estimated at 90 kg. The fuel endurance was 3 hours which was calculated to weigh 1803 lb. The aircraft basic empty weight was 5267 lb.

The take off weight was therefore estimated as follows:

Pilot: 176 lb

Six passengers @ 176 lb	1058
Baggage	198
Fuel	1803
Empty weight	5267
Take off weight	8502 lb

ARUSHA AIRPORT

Arusha airport, elevation 4550 feet, has one runway 09/27 which is 1639 meters long and 32 meters wide. At the time of the accident only the last 500 metres of runway 27 had been resurfaced. The remaining length had a run down tarmac surface which had pot holes. The runway surface was uneven and also showed signs of chicken-wire cracking at a number of points. Some pilots reported that the runway was damaging their aircraft landing gears. The reported that they were sometimes forced rotate as soon as feasible and retract landing gears for fear of damage.

ANALYSIS

The aircraft was correctly loaded and the center of gravity was within the flight envelope at the time of the attempted take-off. The tire marks on the ground showed that the aircraft actually lifted off the ground momentarily after covering 540 metres and regained the ground with the landing gear in transit. Eyewitnesses said that the aircraft lifted off the ground but was seen to nose down with the landing gear retracting.

The Cessna F406 flight manual shows that for the aircraft take off weight of 8502 lb, 5H-RAS should have been rotated at 98 kt. The prevailing wind (15 kt NW) had a 10 kt head wind component. Extrapolation gives a ground roll of at least 786 metres. Since the aircraft rolled for only 540 metres, the rotation speed of 98k could not have been attained. The aircraft became momentarily airborne after rotation possibly due to ground effect. It subsequently stalled and regained the ground.

CONCLUSIONS

There does not appear to be any defects in the aircraft, which could have contributed to this accident. The available evidence would point to premature rotation and premature retraction of the landing gear.

Much of the pilot's recent flying was on low speed aircraft. He had flown Cessna 208s and Twin Otters for many years. His experience on the Cessna 406 was 80 hours. In fact he had flown a Twin Otter only hours before switching to the Cessna 406.

SAFETY RECOMMENDATIONS

It is recommended that:

1. Pilots should make adequate flight preparations and follow the check list on all flights.
2. Operators should try to avoid switching pilots among different of aircraft types.
3. The runway at Arusha should be repaired immediately.