

AAIB Bulletin No: 3/95 **Ref:** EW/G94/12/05 **Category:** 1.2

Aircraft Type and Registration: Cessna 335, G-RIND

No & Type of Engines: 2 Continental TSIO-520-EB piston engines

Year of Manufacture: 1980

Date & Time (UTC): 15 December 1994 at 0825 hrs

Location: Rochester Airfield, Kent

Type of Flight: Private

Persons on Board: Crew - 1 Passengers - None

Injuries: Crew - None Passengers - N/A

Nature of Damage: Both propellers destroyed and engines shock loaded; nose gear sheared off and port tip tank punctured; other minor airframe damage

Commander's Licence: Private Pilot's Licence

Commander's Age: 59 years

Commander's Flying Experience: 405 hours (of which 62 were on type)
Last 90 days - 10 hours
Last 28 days - 0 hours

Information Source: Aircraft Accident Report Form submitted by the pilot and enquiries by the AAIB

The pilot planned to takeoff from Runway 34; this is a grass runway with a declared Take-off Run Available (TORA) of 966 metres, although there is approximately 100 metres additional distance available prior to the runway threshold. The surface wind was 210°/02 kt, the sky was clear, surface temperature was 1°C and visibility was 5,000 metres with some shallow fog in low areas. Additionally, the airfield surface was completely covered in frost.

The airfield inspection had not yet been done and the pilot of G-RIND, when he was informed of this, elected not to delay his departure to await this inspection. He had used a de-icing spray on the aircraft windscreen and on the leading edges of the wings, and had noted the presence of light hoar frost on the aircraft. After a normal start, the pilot allowed the engines to warm up to normal operating temperatures before positioning G-RIND for the maximum possible take-off run on Runway 34. He held the aircraft on the brakes while increasing power and had almost achieved full power before commencing his take-off run; engine parameters were normal and initial acceleration also seemed

normal. As the aircraft approached 60 kt, it crossed the intersection with Runway 20/02 at which point an undulation in the ground bounced G-RIND almost airborne. The pilot reported that he held the aircraft down but then, at his preplanned point and at only 75 kt, he decided that the acceleration was too slow and commenced a rejected take-off procedure. Unfortunately, the front windscreen had suddenly become obscured with frost and he could only see out of the side windows; however, everything was white and he could not make out any visual references. Even with both throttles closed and full symmetrical braking applied, the pilot was not aware of any retardation, had no external references and no directional control. The aircraft departed the runway to the left and, shortly afterwards, the nose of G-RIND pitched down and the propellers contacted the ground; after the aircraft came to rest beside the perimeter fence, the pilot turned off the fuel and electrics and exited through the passenger door.

The pilot subsequently stated that his pre-flight performance calculations indicated that a safe takeoff could be achieved but, on reflection considered that the presence of hoar frost on the airframe and the predominantly soft ground (under the light frost) degraded the take-off performance more than he expected. Nevertheless, he believed that he could have stopped the aircraft safely if he could have kept it on the runway; the windscreen prevented him from maintaining directional control. He considered that this obscuration could have been caused by the de-icing fluid, which he had not cleaned off, mixing with moisture and travelling over the windscreen during the take-off ground roll and then refreezing.