

No: 12/91

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Category: 1c

Aircraft Type and Registration: Piper PA-22-160 Tripacer (Modified), G-JEST
No & Type of Engines: 1 Lycoming O-320-B2A piston engine
Year of Manufacture: 1960
Date & Time (UTC): 4 October 1991 at 0730 hrs
Location: Flecknoe Airfield, Warwickshire
Type of Flight: Private
Persons on Board: Crew - 1 Passengers - None
Injuries: Crew - None Passengers - N/A
Nature of Damage: Substantial damage to mainplanes and struts, fuselage empennage and landing gear
Commander's Licence: Commercial Pilot's Licence with Instrument rating
Commander's Age: 38 years
Commander's Flying Experience: 5,000 hours (of which 150 were on type)
Information Source: Aircraft Accident Report Form submitted by the pilot and field examination by AAIB

The aircraft was a Piper PA 22 Tripacer which had been fitted with a 160 Hp engine and modified back to the PA20 Pacer tailwheel type undercarriage. During this conversion, the aircraft had been fitted with PA23 Aztec type wheels with their associated floating caliper disc brakes.

The aircraft was being operated off a rolled earth strip about 500 metres long, orientated West/East downhill. There was no significant wind at the time of the accident.

After completing the normal power and pre-take off checks, the aircraft was held on the toe brakes and the engine run up to full power before releasing the brakes to start the take off roll. The aircraft appeared to accelerate sluggishly although the pilot observed that the engine rpm was as expected for the indicated airspeed. Having assessed that the airspeed indicator was registering reasonably correctly, the pilot elected to abandon the takeoff with about half the runway remaining.

After closing the throttle and allowing the tail to settle, the pilot applied the toe brakes gently. The aircraft swung immediately and viciously to the right which the pilot countered instinctively by

applying left rudder and releasing the brakes. This action corrected the swing initially but, as the aircraft came straight and its speed decayed, it swung right again. This second swing was not controllable even by application of full left rudder and some left braking and a groundloop developed during which the left wingtip hit the ground and the aircraft flicked over onto its back.

An examination of the strip, made by the pilot immediately after the accident, revealed marks on the surface suggesting that the right wheel had locked and skidded at both points on the runway at which the aircraft had swung to the right. He also noticed that, although it was possible to turn both the left main and tail wheels, it was not possible to turn the right mainwheel on its axle.

An engineering examination done some days after the accident revealed that the right mainwheel was still reluctant to turn. Tests showed that the parking brake release appeared to operate correctly on both wheels, the toe brake action on both pedals released normally and the wheel brake pistons of both brakes could be pushed back easily to allow clearance between the moving brake pad and the disc. It was noted, however, that the fixed pads on the right brake were still in quite hard contact with the brake disc even though it was possible to turn that wheel with difficulty. Further examination revealed that the floating action of the caliper of the right brake had seized, thus preventing proper release of the right brake.

Failure of the brake to release properly could lead to rapid heating, and subsequent erratic behaviour, of the brakes.