Aviation Safety Investigation Report 199700909

Amateur Built Aircraft
Wheelers Express

21 March 1997

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NOTE: All air safety occurrences reported to the ATSB are categorised and recorded. For a detailed explanation on Category definitions please refer to the ATSB website at www.atsb.gov.au.

Aviation Safety Investigation Report

199700909

The Bureau did not conduct an on scene investigation of this occurrence. The information presented below was obtained from information supplied to the Bureau.

Occurrence Number: 199700909 **Occurrence Type:** Accident
Location: Coolangatta, Aerodrome
State: QLD **Inv Category:** 4
Date: Friday 21 March 1997
Time: 1550 hours **Time Zone** EST
Highest Injury Level: None

Aircraft Manufacturer: Amateur Built Aircraft
Aircraft Model: EXPRESS 260
Aircraft Registration: VH-PNK **Serial Number:**
Type of Operation: Non-commercial Pleasure/Travel
Damage to Aircraft: Substantial
Departure Point: Coolangatta QLD
Departure Time: 1420 EST
Destination: Coolangatta QLD

Crew Details:

Role	Class of Licence	Hours on Type	Hours Total
Pilot-In-Command	ATPL	4.0	14000

Approved for Release: Friday, May 9, 1997

The pilot reported that after a normal approach in light wind to runway 14 at Coolangatta, followed by what appeared to be a normal touchdown, the nosegear collapsed. The aircraft came to rest nose down, supported by the propeller, 320 m from the runway threshold.

The aircraft was undergoing first of type testing in accordance with CASA Flight Test Format for CAO 101.28 category aeroplanes.

On the day of the accident the pilot had been conducting climb and stall tests at close to the maximum takeoff weight (MTOW) at near the most forward centre of gravity. The maximum landing weight (MLW) is 1315 kg and the centre of gravity (CG) limits are between 1930 mm (forward) and 2132mm (aft) from the datum. At the time of landing, the approximate weight and balance was 1240 kg and 1948 mm.

Examination of the runway revealed that the nosewheel had scored the surface for about 0.6 m at a point 87 m from the runway threshold (187 m from the runway end). No further marks occured until propeller strikes appear 133 m from the runway threshold, 187 m before the aircraft came to rest.

Examination ot the damaged nosewheel strut, which is a hollow metal tube, indicated that the fracture occurred at a point on the tube which may indicate defective welding or corrosion. Furthermore, where the strut was attached to the fuselage there was minimal movement or flexibility in the attachment to absorb shock or pressure. During static weight and balance measurements, the static weight on the nosewheel was 182 kg. Consequently when the aircraft was landed at a heavy weight with a forward CG, excessive force may have been exerted on the nosegear the landing, causing it to fail.

The pilot has recommended that the structural integrity of the nosewheel strut be further investigated, redesign of the strut attachment, and a check of the elevator control system. He further recommended that the forward CG limit be reduced, and calibration of the airspeed indicator be carried out.