ACCIDENT

Aircraft Type and Registration:	Jabiru UL, G-OMHP
No & Type of Engines:	1 Jabiru Aircraft Pty 2200A piston engine
Year of Manufacture:	2000
Date & Time (UTC):	23 July 2010 at 1645 hrs
Location:	Kingsmuir Airfield, Fife
Type of Flight:	Private
Persons on Board:	Crew - 1 Passengers - 1
Injuries:	Crew - None Passengers - None
Nature of Damage:	Damage to fuselage, left wing, nose leg, propeller
Commander's Licence:	National Private Pilot's Licence
Commander's Age:	63 years
Commander's Flying Experience:	68 hours (of which 18.5 were on type) Last 90 days - None Last 28 days - None
Information Source:	Aircraft Accident Report Form submitted by the pilot and additional AAIB inquiries

Synopsis

The pilot had rigged the aircraft prior to being inspected and test flown by a Light Aircraft Association (LAA) inspector. Whilst awaiting his arrival the pilot decided to conduct a "practice takeoff" - essentially an accelerate-stop manoeuvre on the runway. However, at about 50 kt the aircraft started to drift to the right and the pilot was unable to prevent the aircraft from departing the runway and striking an earth bank. It was subsequently found that a safety pin, which retained a pin attaching the right-hand flap to its operating linkage, was missing. However, it could not be determined whether this was a factor in the accident.

Circumstances of the accident

The aircraft had been inspected by an LAA inspector on 30 May 2010 for the renewal of its Permit to Fly. However, it was not possible to conduct the necessary flight test on that day due to bad weather. A combination of continued bad weather and the owner/pilot working away from home caused further delays in arranging a test flight within the requisite 30-day period from the inspection. The owner then arranged for a repeat inspection, together with a test flight, to be carried out by a different LAA inspector who happened to be visiting Kingsmuir Airfield on 23 July to work on another aircraft.

On the day of the accident, the owner, took the aircraft out of the trailer in which it had been

stored since 30 May. After rigging the aircraft, he checked the engine oil and put 55 litres of fuel in the tank. At this time the LAA inspector was working in a nearby hangar, so the owner decided to conduct a power check, followed by a 'practice takeoff', prior to the inspection on his aircraft. The owner subsequently stated that it was not his intention to leave the ground and he intended simply to carry out an accelerate-stop procedure on the runway, with his son on board as a passenger.

After checking the magnetos, full power was applied and the aircraft accelerated along the grass runway, with zero flap selected. At a speed of around 50 kt the aircraft started to veer to the right; the pilot reduced power and applied the brakes. However, this appeared to exacerbate the situation; the aircraft ran onto rough ground on the right-hand side of the runway before spinning round so that the left wing contacted an earth bank and a fence. At some point during this process, the nose leg collapsed and the propeller contacted the ground. The aircraft came to rest with the left wing partially torn off and its associated wing strut separated close to its attachment to the fuselage. The occupants were uninjured and left the aircraft via the doors.

Subsequent examination of the aircraft

The LAA inspector later commented that he had heard the sound of the aircraft engine but was not initially aware of the accident. When he arrived at the scene, he noted that the right flap was hanging in its fully down position; it was apparent that a pin that connected the flap to the operating linkage in the fuselage had become disengaged. This in turn was due to the absence of a 'Terry-clip' type safety pin that normally would be inserted through a hole in the flap connecting pin.

The aircraft was removed to a repair organisation, who conducted an examination with a view to repair. This included an examination of the brake system components, which revealed no evidence of disc roughness or any other feature that could have led to the right brake 'grabbing' or dragging.

The nose landing gear leg was sent to the AAIB, where it was examined in conjunction with photographs of the engine firewall to which it had been attached. All the failures in the housing appeared consistent with overload, indicating that the nose leg became detached during the accident rather than being an initiator of it. The steering rod was also found to have sustained an overload failure during the process of the leg detachment.

Discussion

Whilst it was not intended for the aircraft to become airborne during this 'practice takeoff', there was an inevitable focus on the absence of the right-hand flap safety pin. The pilot stated that he had selected zero flap; thus the effect of a flap pin disengagement during the ground roll would result in the flap streaming in the approximate zero position. This would be unlikely to produce any significant directional control difficulties, although there could be some loss of lift if the flap rigging allowed the airflow to push it slightly beyond its normal retracted position.

There was insufficient evidence in this case to determine whether the missing safety pin was a factor in the accident. However there can be no doubt that a flap pin disengagement whilst airborne, with flaps deployed, would result in a flap asymmetry condition with potentially serious consequences. Whilst the LAA inspector, had he had the opportunity, would probably have found the discrepancy, the event nevertheless emphasises the necessity of a thorough pre-flight inspection after rigging any aircraft.