**ACCIDENT**

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| **Aircraft Type and Registration:** | Cirrus SR20, G-TAAA |
| **No & Type of Engines:** | 1 Teledyne Continental IO-360-ES piston engine |
| **Year of Manufacture:** | 2005 |
| **Date & Time (UTC):** | 10 June 2008 at 1653 hrs |
| **Location:** | Denham Airfield, Buckinghamshire |
| **Type of Flight:** | Private |
| **Persons on Board:** | Crew - 1 Passengers - 1 |
| **Injuries:** | Crew - 1 (Minor) Passengers - 1 (Minor) |
| **Nature of Damage:** | Damaged beyond economic repair |
| **Commander's Licence:** | Private Pilot's Licence |
| **Commander's Age:** | 61 years |
| **Commander's Flying Experience:** | 417 hours (of which 47 were on type)<br>Last 90 days - 26 hours<br>Last 28 days - 4 hours |
| **Information Source:** | Aircraft Accident Report Form submitted by the pilot and further AAIB inquiries |

**Synopsis**

Following an approach to land flown with a higher than normal threshold speed, the aircraft bounced three times. The propeller struck the runway surface on the second and third bounces. After the third bounce, the pilot initiated a go-around and the aircraft started to climb. The flaps were raised fully but the aircraft crashed into a wood that lay beyond and slightly to the left of the end of the runway.

**History of the flight**

The aircraft departed the airfield at 1610 hrs for a navigation exercise, which was uneventful, and returned approximately 1 hour 50 minutes later. At the time of the approach the wind was 360º/10 kt giving a crosswind of approximately 9 kt from the left. The airfield was reporting CAVOK, a temperature of +20º C and a QNH of 1024 mb.

The approach to Runway 06 was flown with flaps at 100% in accordance with the pilot's operating handbook (POH). The pilot recalled that the approach was "good" except that he believed the threshold speed was between 80 and 85 kt rather than 75 kt as specified in the POH. The aircraft touched down and immediately bounced back into the air. The next contact with the ground was nosewheel first and the propeller struck the runway before the aircraft bounced again. The final contact with the runway was also nosewheel first and

once again the propeller struck the runway before the aircraft bounced. The pilot decided to go around and applied full throttle, leaving the flaps at 100%. He was not aware that the propeller had struck the runway and he did not notice any lack of thrust compared to normal. At the point that the go-around was initiated, the aircraft was seen to be "close to the numbers on the Runway 24 threshold"[1].

The pilot reported that the aircraft climbed on a heading slightly to the left of the runway centreline. When he decided there was a positive rate of climb, he raised the flaps from 100% to 0% but the aircraft began to sink with its wings level. He did not remember the exact height or speed at flap retraction and did not report any indications of approaching the stall. The aircraft crashed into a wood that began approximately 100 m beyond the runway and slightly to the north of the extended centreline. Just prior to impact the pilot assessed that the nosewheel would clear the trees but not the main landing gear and the aircraft entered the trees "belly first". A witness saw the aircraft attempt to get airborne and also saw it "belly land" into the trees. It came to rest approximately 150 m beyond the end of the runway and 35 m to the left of the extended runway centreline.

There was no evidence of fire, fuel spillage or electrical burning at the accident site. Both occupants were wearing full harnesses and able to vacate the aircraft unassisted. The pilot ensured that the fuel and electrics were turned off and he inserted the safety pin into the ballistic recovery system (BRS). Later, the manufacturer's representative attended the site to ensure that the BRS was made safe.

**Footnote**

[1] The painted numbers are 105 m from the end of the hard surface.

**Operating procedures**

The SR20 training guide states that:

> *'a stabilised approach is critical to a good landing. If a stabilised approach is not attained by 200 ft agl a go around must be executed.'*

A *'proper airspeed'* is included as one of the stabilised approach criteria. The guide advises that flaps should be raised to 50% prior to applying power on a touch and go or a stop and go landing. It also notes:

> *'the aircraft may or may not be trimmed for a normal takeoff when executing a stop and go / touch and go. Be very conscious of rotation speeds and pitch attitudes during the takeoff roll and climb. Re-trim the aircraft when time permits.'*

Following a go-around or balked landing, flaps should be retracted from 50% to 0%

> *'above 85 kt IAS; when clear of obstacles and terrain; and with a positive rate of climb.'*

**Performance information**

Following the accident, the Chief Flying Instructor (CFI) of the operator concerned carried out a trial at a safe altitude and achieved a rate of climb of 800 ft/min with 50% flap following a simulated go around. The rate of climb reduced to 200 ft/min when flaps were raised to 0%.

**Analysis**

Discussion with the pilot and CFI suggested that the slightly high approach speed caused the aircraft to float when the pilot checked the rate of descent prior to landing. Concerned that the aircraft was now using up

available landing distance, the pilot probably lowered the nose in an attempt to land. This set up a rate of descent sufficient to cause the aircraft to bounce. A similar sequence of events followed but on these occasions the nosewheel contacted the runway before the main landing gear and the propeller struck the runway before the aircraft bounced.

The go-around was initiated with limited runway remaining and the flaps were left at 100% prior to applying full power. This meant the aircraft was climbing in a configuration unfamiliar to the pilot. He did not notice a reduction in thrust from normal full power but a marginal loss of thrust would only have served to reduce the climb performance of the aircraft. He noticed a sink when the flaps were raised but the wings remained level. Although the rates of climb observed by the CFI in his trial are not published figures, they give an indication of the decrease in climb performance that would have been caused by raising the flaps. In the accident event, the rate of climb achieved following flap retraction was not sufficient for the aircraft to clear the trees.