

AAIB Bulletin No: 8/95

Ref: EW/G95/05/30

Category: 1.3

Aircraft Type and Registration: Zlin Z.526 Trener Master, G-ZLIN

No & Type of Engines: 1 Walter Minor 6-3 piston engine

Year of Manufacture: 1966

Date & Time (UTC): 26 May 1995 at 1655 hrs

Location: Bourn Airfield, Cambridgeshire

Type of Flight: Private

Persons on Board: Crew - 2 Passengers - None

Injuries: Crew - None Passengers - N/A

Nature of Damage: Damage to propeller, engine and nose cowlings

Commander's Licence: Private Pilot's Licence

Commander's Age: 46 years

Commander's Flying Experience: 430 hours (of which 2 were on type)
Last 90 days - 2 hours
Last 28 days - 2 hours

Information Source: Aircraft Accident Report Form submitted by the pilot,
AAIB enquiries and inspection of the aircraft

The owner pilot was undergoing type familiarisation under supervision. He was seated in the rear cockpit, with the front cockpit occupied by a chief flying instructor (CFI) with more than 50 hours experience on Zlin 326 and 526 aircraft. All the landing gear controls were in the rear cockpit, but with the associated red and green indicator lights in both cockpits. The aircraft was also fitted with mechanical indicators which protruded above each wing when the landing gear was down and a 'bell' which sounded if the landing gear was not locked down when the throttle was fully retarded, ie within about 1/4 inch of fully closed.

The owner was considered ready for solo operation and had flown several circuits during which the landing gear retracted and extended normally. However the CFI wished to demonstrate the effects of leaving a small amount of power on, rather than conducting glide approaches, in order to achieve better elevator control during the 'flare'. A further circuit was therefore flown with the CFI handling. The CFI called for landing gear and flap extension and the owner pilot stated that he acknowledged and complied. He noticed the red lights extinguish but neither pilot saw the green lights illuminate, possibly due to the ambient light conditions. He checked the mechanical indicators, on the downwind

and left base legs of the circuit, and these appeared to be extended. The landing was made with a "trickle of power". However as the aircraft touched down the propeller and nose cowlings contacted the runway. The aircraft slid to a halt and both pilots, who were uninjured, vacated their cockpits. The landing gear was found to be retracted. The pilot did not report hearing the warning bell during the approach, or after landing.

The aircraft was recovered by the associated maintenance organisation. After placing the aircraft on jacks, the landing gear was extended and retracted normally numerous times. However it was reported that immediately after the accident the landing gear would not lock down fully, but this would have required an interruption of electrical power and no reason for this was found. With an AAIB Inspector present, the landing gear was extended to the point where it was 'down but not locked over centre', by interrupting the power supply to the associated electric motor. The landing gear could have been pushed up in this condition, but this would inevitably have caused damage to the motor mounting structure, or gear operating system, which would have been evident. However, there was no evidence that this had, in fact, occurred. The emergency landing gear extension system was operated and functioned correctly, but this system was found still wirelocked and therefore had not been used.

It was noted that the landing gear operating system and associated warning bell both obtained their electrical power from a circuit breaker switch in the rear cockpit, immediately underneath the pilot's right elbow. Placing this switch to off (down) would prevent the landing gear from lowering (or stop it mid travel) and disable the bell. In addition, a possibly suspect electrical connection existed on a battery connector. Although no intermittency could be found when this was examined, if this connection had caused an open circuit it would have had the same effect on the landing gear system. It was also observed that the landing gear position mechanical indicators always protruded slightly above the wing, extending progressively to about 3 inches as the gear extended.