Aviation Safety Investigation Report 199603707

Aero Commander Div Shrike Commander

14 November 1996

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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

199603707

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: 199603707 **Occurrence Type:** Accident
Location: Launceston, Aerodrome
State: TAS **Inv Category:** 4
Date: Thursday 14 November 1996
Time: 0515 hours **Time Zone** ESuT
Highest Injury Level: None

Aircraft Manufacturer: Aero Commander Div
Aircraft Model: 500-S
Aircraft Registration: VH-LST **Serial Number:** 3111
Type of Operation: Charter Cargo
Damage to Aircraft: Substantial
Departure Point: Hobart Tas
Departure Time:
Destination: Launceston Tas

Crew Details:

Role	Class of Licence	Hours on Type	Hours Total
Pilot-In-Command	Commercial	382.0	5733

Approved for Release: Wednesday, December 11, 1996

The pilot was conducting a night freight flight from Launceston to Hobart and return. He reported that during the approach to Launceston runway 32L the hydraulic pressure was normal, and the landing gear and flap selection was normal. The landing gear indicated three greens on extension and on short final. The throttles were closed in the flare and a nose high touchdown was made on the main landing gear. The nose gear was lowered and braking commenced for an anticipated turnoff onto taxiway 'Bravo'. The pilot reported that just before turning off, the propellers were put in fine pitch and, as he was reaching for the right engine fuel pump switch, the aircraft rolled to the right, the landing gear warning horn sounded, and the sound of the right propeller striking the tarmac was heard. The pilot reported that at this point he observed only two green landing gear lights, and the landing gear handle was down. He then retracted the flaps and put the safety pin in the gear selector lever.

Visual inspection showed that the right main landing gear had retracted backwards and the aircraft was resting on the right wing tip, the lower fuselage and the right propeller. When the aircraft had been righted and hydraulic power was applied, the right main landing gear extended and locked normally.

After the aircraft had been recovered, maintenance investigation did not disclose any anomaly with the landing gear and its associated systems that could have initiated a retraction of the right main landing gear. The main landing gears are locked down by the overcentre action of a horizontal brace that can only be broken by selecting the landing gear up, coupled with the application of hydraulic pressure.

Anecdotal evidence from the Aerocommander service centre was that retractions had occurred to other aircraft while on the ground. Inadvertent gear up selections had been made, and when the aircraft had passed over small ground undulations sufficient to remove some of the weight from the landing gear and allow hydraulic pressure to break the overcentre lock, the gear had retracted.

The landing gear is hydraulically activated from a selector on the lower right instrument panel. A pilot activated mechanical lock is fitted to stop inadvertent landing gear retraction. The lock lever is lifted and then moved to the left to place a pin across the selector lever to inhibit its movement.

The pilot on this flight had chosen never to use the mechanical lock because he considered that to remove the lock during a go-round would be an additional distraction during a period of high workload.

The pilot could not offer any explanation as to why the landing gear retracted. He said he could not recall having touched the selector lever. He was not employed full time as a pilot and had done a days work at his full time job the day before the accident. He had 5 hours sleep before commencing duty at 0230 and advised that he was well aware of the phenomenon of micro sleeping, and was familiar with the flight routine having done many similar flights over the last 10 years.

Microsleeps are brief periods of sleep, usually lasting for a few seconds, when brain function is equivalent to the upper levels of sleep. The person having a microsleep can have their eyes open, but the incoming environmental information is not being processed. Therefore external information is not being registered or perceived by the brain. These microsleeps are often seen in people who are fatigued or suffering from sleep loss.

The time of day a person wakes can also effect their performance. Waking prior to 0600 has been shown to degrade human performance. Due to circadian functioning of the human body there are two particular times of the day in which performance is lower even without sleep loss.

The period 0300 to 0500 is a circadian low point for temperature, performance, and alertness. During this period the brain triggers sleep and sleepiness. Performance and alertness can be degraded during the nocturnal window, which is the period from 0200 until 0600.

The investigation did not disclose any problems of a mechanical nature that would have allowed the landing gear to retract. The flight was conducted during the critical period of the circadian rhythm and the nocturnal window. The investigation could not positively determine whether the pilots performance was affected by these factors.