

AVIATION OCCURRENCE REPORT

LOSS OF CONTROL - STALL

PIPER J4A C-GFLE  
PONSONBY, ONTARIO  
8 JUNE 1997

REPORT NUMBER A9700096

The Transportation Safety Board of Canada (TSB) investigated this occurrence for the purpose of advancing transportation safety. It is not the function of the Board to assign fault or determine civil or criminal liability.

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### *Summary*

At approximately 1210 eastern daylight time (EDT), the pilot and passenger were taking-off on a local pleasure flight from runway 14 at the Ponsonby aerodrome, Ontario. The Piper J4A aircraft was in the initial climb after take-off when it was observed by resident witnesses to bank steeply to the right, pitch nose-down, and strike the ground. The aircraft struck soft ground in a near-vertical, nose-down attitude, and a post-crash fire ensued. Some witnesses to the occurrence ran to the accident site to aid in the rescue of the occupants; however, because of the fire, only the passenger was able to be extricated from the burning aircraft. The pilot was fatally injured, and the passenger later died of his injuries at the Hamilton General Hospital.

*Ce rapport est également disponible en français.*

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All times are EDT (Coordinated Universal Time minus four hours) unless otherwise noted.

## *Other Factual Information*

The weather reported at Kitchener/Waterloo Regional Airport, 10 nm south of Ponsonby, was as follows: wind 070 degrees magnetic at 3 knots, visibility 15 statute miles, scattered cloud at 4,000 and 10,000 feet, broken cloud at 20,000 feet, temperature 20°C, dewpoint 12°C, and altimeter setting 30.18.

The aircraft had a total airframe time logged as 1743 hours. The aircraft was destroyed by the crash and the post-crash fire. The aircraft flight controls were checked for continuity and all were functional. Upon examination of the powerplant, it was evident that the engine (Continental A-65-8F) was producing substantial power at the time of the impact. Based on estimated fuel and occupant weights, it was calculated that the aircraft was operated near its maximum allowable weight of 1301 pounds. Witnesses to the flight observed that the aircraft was flying slower and at a much lower altitude than they normally observed.

The pilot was certified and qualified to conduct the flight in accordance with existing regulations. The passenger had a student pilot permit and was under training towards obtaining his private pilot licence, but he was a passenger on this flight. An autopsy was performed on the pilot and toxicological samples were forwarded to The Centre of Forensic Sciences. Toxicology revealed that the pilot's blood samples contained the prescribed drug Lithium; however, there was no record of this on his medical file with Transport Canada.

Lithium is a medication which has been used since 1949 to treat individuals suffering from a form of mental illness called manic depression or bipolar affective disorder. Lithium is effective in decreasing the intensity and frequency of the episodic mood swings from extreme excitement to deep depression that are characteristic of manic depressive illness. The major concern with lithium therapy is toxicity. The initial symptoms lithium toxicity are usually nausea, vomiting, and diarrhea. With increasing levels of lithium the patient's major target organ is the central nervous system with symptoms consisting of blurred vision, drowsiness, dizziness, vertigo, increasing confusion, slurred speech, transient scotomas (blind spots), and blackouts. The concerns with lithium in the aviation environment are the effects on pilot performance of the mental illness for which lithium would be prescribed, the effects of lithium toxicity, and the uncertainty that the patient can maintain blood levels of lithium within the therapeutic range. Because of these concerns medical certification, with regards to pilot licences, is usually denied.

There was no evidence that incapacitation or physiological factors affected the pilot's performance.

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Information was obtained from the following:  
Toxicology - *The Basic Science of Poisons*;  
CPS - *Compendium of Pharmaceuticals and Specialties (32<sup>nd</sup> Edition 1997)*; *Medical Toxicology - Diagnosis and Treatment of Human Poisoning*; and,  
*The MERCK MANUAL of Diagnosis and Therapy - 15<sup>th</sup> Edition*

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Information supplied by Transport Canada Aviation Medicine.

## *Analysis*

There was no pre-accident malfunction of the aircraft found that could have led to this occurrence. The weight of the aircraft was within limits, although it was heavy, and the engine was apparently operating normally. The weather was good and should not have been a factor. From witness descriptions and examination of the crash site, it was established that the aircraft stalled at low level shortly after take-off. Because of the low altitude at which the aircraft stalled, there was insufficient time for the aircraft to recover before it struck the ground. It could not be determined why the aircraft stalled; however, the high gross weight of the aircraft resulted in reduced aircraft climb performance, as observed by witnesses after take-off, which may have had a bearing on the stall.

There was nothing found to indicate that the presence of lithium in the pilot's blood affected his ability to fly the aircraft.

## *Findings*

1. The high gross weight of the aircraft resulted in reduced aircraft climb performance.
2. The aircraft stalled, for undetermined reasons, at too low an altitude to be recovered.
3. The pilot had been prescribed the drug Lithium, which was not reported to Transport Canada.

## *Causes and Contributing Factors*

The aircraft stalled, for undetermined reasons, at too low an altitude to be recovered.

*This report concludes the Transportation Safety Board's investigation into this occurrence. Consequently, the Board, consisting of Chairperson Benoît Bouchard, and members Maurice Harquail, Charles Simpson and W.A. Tadros, authorized the release of this report on 13 August 1998.*