CAA

CIVIL AVIATION AUTHORITY
OF NEW ZEALAND

AIRCRAFT ACCIDENT REPORT

OCCURRENCE NUMBER 01/2660

MICRO AVIATION BANTAM B22J

ZK-JME

NEAR HAMILTON

7 AUGUST 2001

Glossary of abbreviations used in this report:

CAA	Civil Aviation Authority
CAR	Civil Aviation Rule(s)
E	east
F	Fahrenheit
IIC	Investigator-in-Charge
kg	kilogram(s)
kV	kilovolt(s)
m	metre(s)
NZST	New Zealand Standard Time
PPL (A)	Private Pilot Licence (Aeroplane)
rpm	revolutions per minute
S	south
UTC	Coordinated Universal Time

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Aircraft type, serial number and registration:	Micro Aviation Bantam B22J, 01-0179, ZK-JME
Number and type of engines:	One Jabiru 2200
Year of manufacture:	2001
Date and time:	7 August 2001, 1110 hours* (approx)
Location:	Koromatua, near Hamilton. Latitude: S 37° 49.5' Longitude: E 175° 10.6'
Type of flight:	Private
Persons on board:	Crew: 1
Injuries:	Crew: 1 Fatal
Nature of damage:	Aircraft substantially damaged
Pilot-in-command's licence	None
Pilot-in-command's age	61 years
Pilot-in-command's total flying experience:	Not established
Information sources:	Civil Aviation Authority field investigation
Investigator in Charge:	Mr A M Moselen

* Times are NZST (UTC + 12 hours)

Synopsis

The Civil Aviation Authority was notified of the accident at 1120 hours on Tuesday 7 August 2001. The Transport Accident Investigation Commission was in turn notified, but declined to investigate. A CAA site investigation commenced later that day.

The microlight aeroplane was on a local flight to the south of Te Kowhai. In the vicinity of Korumatua, it descended and clipped a roadside power line with the fin, crossed the road and collided with a fence at the front of a house, striking a tree with the right wing and coming to rest close to the house. The pilot was confirmed dead on the arrival of emergency services.

1. Factual information

1.1 History of the flight

1.1.1 On Tuesday 7 August 2001, about 1105 hours, the owner-pilot of ZK-JME departed Te Kowhai airfield with the intent of visiting a colleague at Te Rore, 12 nautical miles to the south.

1.1.2 At Koromatua, five miles south of Te Kowhai, a farmer saw the aircraft cruising overhead in a southerly direction at approximately 500 feet. The witness then noted that the aircraft turned towards the east, reduced power and commenced what appeared to be a rapid descent. The aircraft continued descending in a wings-level attitude until it was lost to view behind a line of trees. A loud bang was heard moments later.

1.1.3 The witness drove to the general area where the aircraft was last seen and found wreckage on a residential property in Jury Road. The pilot was still secured in the left-hand seat of the cockpit and did not respond to a cursory examination. When emergency services arrived, the pilot was pronounced dead.

1.1.4 The accident occurred in daylight, at approximately 1110 hours NZST, at Koromatua, near Hamilton, at an elevation of approximately 130 feet; grid reference 260-S14-019730, latitude S 37° 49.55', longitude E 175° 10.6'.

1.2 Injuries to persons

Injuries	*Crew*	*Passengers*	*Other*
Fatal	1	0	0
Serious	0	0	0
Minor/None	0	0	

1.3 Damage to aircraft

1.3.1 The aircraft was substantially damaged.

1.4 Other damage

1.4.1 The aircraft struck power lines on the southern side of Jury Road. The conductors were not broken, but their clashing together caused a power outage to the area.

1.4.2 A section of a wooden boundary fence and a tree at the front of the property were damaged.

1.5 Personnel information

1.5.1 The pilot, aged 61, had held a Private Pilot Licence, first issued in June 1975. The licence was last renewed as a PPL (A) on 22 October 1991. At that time, the pilot's total flight time was recorded as 372 hours, on Cessna and Piper single-engined aircraft.

1.5.2 The pilot did not hold any form of current pilot medical certificate.

1.5.3 The pilot registered as a client of the Sport Aviation Corporation Ltd (SAC) in 1995 as a PPL (A) holder. The last membership renewal was dated April 1999, with a validity period of 12 months. The flight time recorded by the pilot on the renewal form was 375 hours microlight, and 975 hours other. SAC requested updated medical details from the pilot with the 1999-2000 membership renewal form. These were not supplied, so SAC did not issue a Microlight Pilot Certificate to the pilot.

1.5.4 The investigation was unable to determine the pilot's actual flying experience, as his logbook(s) and related documents could not be found.

1.6 Aircraft information

1.6.1 Bantam B22J, serial no 01-0179, ZK-JME was a Class 2 microlight aeroplane designed and manufactured by Micro Aviation New Zealand Limited, Te Kowhai Airfield. It was a high-wing monoplane with conventional controls, two-place side-by-side seating and was powered by an 80-horsepower Jabiru 2200 engine driving a fixed-pitch wooden propeller.

1.6.2 The aircraft was delivered new to the owner in July 2001. At the time of the accident, an application by the owner for issue of a Flight Permit was being processed by CAA, but the Flight Permit had not yet been issued. Registration markings also had yet to be applied to the aircraft.

11.7 Meteorological information

1.7.1 The weather at the time of the accident was overcast with a light easterly wind and good visibility.

1.8 Aids to navigation

1.8.1 Not applicable.

1.9 Communications

1.9.1 Not applicable.

1.10 Aerodrome information

1.10.1 Not applicable.

1.11 Flight recorders

1.11.1 Not applicable.

1.12 Wreckage and impact information

1.12.1 The aircraft had come to rest against the front wall of a house on the north-eastern side of Jury Road. Site examination and flight path reconstruction found that the aircraft had flown under an 11 kV power line on the opposite side of the road, clipping the wires with the top of the fin leading edge. After crossing the road, the aircraft struck and demolished about 10 m of a wooden fence on the roadside boundary of the property before striking a fruit tree about 3 m beyond the fence and sliding to a halt without forcibly colliding with the house itself. The tail section did, however, leave a faint crease in the edge of the steel roof of the house.

1.12.2 All extremities and control surfaces were accounted for at the site. While both wings had sustained significant damage, the flight controls remained intact and were found to operate normally. The propeller had shattered on impact with the fence, and the distribution of fragments indicated that it was turning at the time. The engine appeared to be undamaged.

1.12.2 Inspection of the cockpit area revealed the following:

- Fuel contents near full;
- Throttle closed position and choke off;
- Flap selector up, matching the actual flap position;
- The tachometer read 1350 rpm, the hour meter showed 6.5 hours and the cylinder head temperature gauge read 200° F;
- The master switch and all engine/fuel selector switches were selected "off" but it was later established that emergency service personnel had turned these off;
- A glove, first aid kit, leather helmet, and a pump-spray bottle of Nitrolingual were found on the floor of the cockpit.

1.12.3 Police photographs taken shortly after the accident show a glove on the pilot's right hand, but not on the left. It was confirmed that the left glove had not been removed by anybody who attended the scene.

1.13 Medical and pathological information

1.13.1 Post-mortem examination of the pilot found the cause of death to be myocardial ischaemia due to coronary artery atheroma. He had not sustained any physical injury.

1.13.2 The pilot's family doctor advised that the pilot had a history of cardiac events commencing in February 2001, with one as recently as 7 May 2001. With the latter, he was admitted to Waikato Hospital and was diagnosed as having severe cardiac artery disease. He was prescribed four medications, including Nitrolingual, which was supplied in a pump spray bottle for inhalation when symptoms manifested themselves.

1.13.3 Medical advice was that after using Nitrolingual, a patient's blood pressure could be reduced enough to cause light-headedness or even fainting in some cases. To mitigate these side effects, the instructions for use recommended that patients use the product when in the most relaxed state possible, preferably lying down.

1.14 Fire

1.14.1 Fire did not occur.

1.15 Survival aspects

1.15.1 The impact forces sustained during the accident were assessed as survivable; there was no distortion of the cockpit area, in which the pilot was restrained by lap and shoulder harness, and he had not sustained any injury during the impact sequence.

1.16 Tests and research

1.16.1 The wreckage was recovered to the manufacturer's premises at Te Kowhai for further examination. Electrical wiring to the engine had been damaged in the impact sequence, and was repaired to enable the engine to be run while still installed in the airframe. An engine run was made without a propeller, and nothing abnormal was noted.

1.16.2 The IIC undertook a familiarisation flight in a practically identical Bantam, to assess the "hands off" flight characteristics. With the throttle closed in cruise flight, airspeed reduced from 65 knots to 45 knots in a wings-level descent, with the engine rpm reducing to about 1200. It was also noted that the aircraft responded quickly to roll commands with the airspeed as low as 35 knots. During the flight, the area surrounding the accident site was inspected from about 500 feet, and it could be seen that there were several choices of open field that would have been suitable for landing.

1.17 Organisational and management information

1.17.1 Not applicable.

1.18 Additional information

1.18.1 Civil Aviation Rules, Part 103 *Microlight Aircraft - Certification and Operating Rules*, stipulate the minimum requirements for the operation of microlight aircraft, and these include:

103.5– ***Pilot Requirements***

(a) Each person acting as the pilot of a microlight aircraft shall–

(1) *hold an appropriate current microlight pilot certificate with an appropriate type rating; or*

(2) *hold a current pilot licence issued under Part 61 with an appropriate type rating; or*

(3) *operate under the direct supervision of a microlight pilot instructor certificate meeting the requirements of 103.7.*

103.105– ***Documents to be carried***

(b) *no person shall operate a Class 2 microlight aircraft or a Class 1 microlight helicopter unless the flight permit required by 103.203(b) is carried in the aircraft.*

*103.203–****Requirement for a flight permit***

(b) *No person shall fly a Class 2 microlight aircraft unless there is in force for that aircraft a flight permit or temporary flight permit issued under this Part.*

1.19 Useful or effective investigation techniques

1.19.1 Nil

2. Analysis.

2.1 The investigation found no pre-accident aircraft defects that would have required an immediate emergency landing. Propeller damage, trapped instrument readings and a post-accident engine run, together with the witness observations, suggest that the power reduction and heading change were initiated by the pilot.

2.2 At the time of the accident, the pilot did not hold a pilot licence, microlight pilot certificate or any form of pilot medical certificate. According to his 1999-2000 Sport Aviation Corporation renewal form, he had flown some 978 hours since his last PPL (A) renewal in 1991. Between that time and when he became affiliated with SAC, there is no record of his having been a member of any other organisation certified under CAR Part 103.

2.3 The Flight Permit for ZK-JME had not been issued at the time of the accident, nor had the required registration markings been applied.

2.4 The pilot had been recently diagnosed with a severe cardiac artery disease, and carried medication for relief of symptoms. After the accident, he was found with his left glove removed, and a bottle of prescribed medication close at hand. Seated on the left side of the cockpit, he would have to use his right hand to manipulate the centrally-located control column, but would have his left hand free when not actually operating the throttle.

2.5 The pilot made no apparent attempt to avoid the roadside power lines during the descent, and given that the aircraft was heading directly for a residential property when it struck the lines, this suggests that the pilot had lost consciousness by this time.

2.6 The pilot sustained no physical injury in the impact sequence; the cause of death was a cardiac event.

2.7 In light of the evidence, it is likely that he experienced "heart attack" symptoms in flight and decided to land as soon as possible, meanwhile attempting to obtain relief by use of his medication. It is evident that he lost consciousness, and may have even died, before reaching the ground.

2.8 No safety recommendations were made as a result of this investigation.

3. Conclusions

3.1 The pilot did not hold a current pilot licence, microlight pilot certificate or pilot medical certificate of any kind.

3.2 The pilot had not obtained a Flight Permit prior to operating the aircraft.

3.3 The pilot died as a result of a cardiac event, the onset of which occurred in flight.

3.4 The pilot may have recognised that he needed to land as soon as possible, but became incapacitated before he could achieve this.

3.5 No pre-accident defect was found with the aircraft.

Richard White
Manager Safety Investigation
1 May 2002