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ALBERGRAFT ACCIDENT REPORT

No. 90-005T

Piper PA 38

ZK-KVM

Pohangina Valley

24 November 1990

**Transport Accident Investigation Commission
Wellington - New Zealand**

TRANSPORT ACCIDENT INVESTIGATION COMMISSION

AIRCRAFT ACCIDENT REPORT NO. 90-005T

Transport Accident Investigation Commission
Wellington

Aircraft Type, Serial Number and Registration: Piper PA38-112, 38-79A1078, ZK-KVM

Number and Type of Engines: 1 Lycoming O-235-LC2

Year of Manufacture: 1979

Date and Time: 24 November 1990 at 1815 hours NZDT

Location: Near Hilliard Airstrip
Pohangina, 1200 feet amsl
Latitude: 40° 11.5'S
Longitude: 176° 52.3'E

Type of Flight: Private (Scenic)

Persons on Board: Crew: 1 Passengers: 1

Injuries: Crew: 1 Serious Passengers: 1 Fatal

Nature of Damage: Damaged beyond economical repair. All airframe components

Pilot in Command's Licence: Private Pilot Licence
Aeroplane

Pilot in Command's Age: 17

Pilot in Command's Total Flying Experience: 70 hours

Information Sources: Transport Accident Investigation Commission field investigation

Investigator in Charge: Mr R Chippindale

Chief Commissioner
Transport Accident Investigation Commission

The attached report summarises the circumstances surrounding the accident involving Piper PA 38 aircraft ZK-KVM at Pohangina Valley on 24 November 1990 and includes suggested findings and safety recommendations.

This report is submitted pursuant to Section 8(2) of the Transport Accident Investigation Commission Act 1990 for the Commission to review the facts and endorse or amend the findings and recommendations as to the contributing factors and causes of the accident.

28 January 1992
R CHIPPINDALE
Acting Chief Executive

APPROVED FOR RELEASE AS A PUBLIC DOCUMENT

12 March 1992
M F DUNPHY
Chief Commissioner

1. NARRATIVE

1.1.1 During the afternoon the pilot telephoned the Chief Flying Instructor (CFI) of a flying school and obtained his approval to hire a PA 38 aircraft for a period of night flying. Subsequently he gained an amended approval to take the aircraft on a local scenic flight with an earlier take-off time to complete the scenic portion of the flight during daylight hours.

1.1.2 The CFI knew the pilot as he had obtained his Private Pilot Licence Aeroplane (PPL A) with the flying school and the CFI had subsequently completed two check flights with him. The detail of the intended flight was not discussed with the CFI, however the CFI confirmed the pilot had experienced no difficulty with absorbing the low flying instruction he had given him.

1.1.3 ZK-KVM took off from Palmerston North Aerodrome at 1804 hours and proceeded direct to the Hilliard airstrip at the end of No 1 Line, a road running south-eastwards from the Pohangina River to the foothills of the Rauhihe Ranges.

1.1.4 A party of seventh form students from a local school were camped in the vicinity of this airstrip and the pilot was one of their number. He and a friend had left them, during the afternoon, to hire the aircraft. When he returned he made three passes over the airstrip. The third pass, unlike the previous two which were from the north-east, was from the west flying up the centre line of the strip towards his class mates who were playing or watching a game of cricket. The pilot flew the aircraft from a height of some 50 feet above the lower end of the sloping airstrip and turned just before the aircraft reached the spectators to continue into the valley of the Matangani Stream.

1.1.5 Witnesses watching the aircraft commented on the entry into the valley as there was no "go-around" path from the strip in that direction.

1.1.6 The aircraft appeared to be performing normally and shortly after it entered the valley it was seen to attempt a "wing-over" type of manoeuvre then nosedive out of sight. The sound of an impact was heard shortly afterwards.

1.1.7 Immediately two of the school party set off on foot for the scene and sighted the aircraft in a 60 degree nosedown attitude in native bush at the foot of a bluff. The two then split up, one to return for assistance while the other made his way to the wreck.

1.1.8 The Matangani Stream flowed between several steep bluffs which rose some 300 feet above the stream bed. At the accident site the valley converged to a narrow gut alongside one of the bluffs and turned sharply.

1.1.9 On arrival the rescuer found the pilot seriously injured but conscious and the passenger deceased.

1.1.10 Those who were first on the scene used the aircraft's "Crash Axe" to free the pilot after ascertaining that the passenger was beyond assistance.

1.1.11 The pilot was subsequently flown to Palmerston North Hospital by a rescue helicopter.

1.1.12 The aircraft collided with the ground on a heading of 200° magnetic in a 70° nose down attitude on a 55° lightly wooded rock face, resulting in an impact angle of some 15°.

1.1.13 The damage consisted of chordwise compression of the wings and buckling of the fuselage sufficient to allow the horizontal tail surface to jack-knife forwards over the cockpit and contact the propeller. The impact of the left wing onto a fallen rimu tree had knocked the left fuel tank section out of the leading edge forward of the main spar. Both fuel tank caps were in place.

1.1.14 Both cockpit doors were still latched and the safety harnesses including the diagonal upper restraints were attached and still in place. All harness anchorages and the seat mountings held and showed no sign of distress.

1.1.15 The engine firewall and instrument panel were pushed rearward reducing the available leg space for the two occupants to about 50 percent of the normal. The passenger's left foot was trapped beneath the seat and the floor and his right leg was pinned by a buckling of the right cockpit wall. He was grasping the control column the horns of which were bent forward through almost 90 degrees.

1.1.16 There were indications that one notch of flap might have been selected.

1.1.17 The emergency locator transmitter (ELT) was switched to the "ON" position and still transmitting and the VHF communications transmitter/receiver was set on 120.60 MHz and switched "ON".

1.1.18 The local weather recorded at Palmerston North Aerodrome at the time of the accident was:

Wind:	320°T/8 knots
Visibility:	99 km
Cloud:	One octa of cumulus base 3000 feet
Temperature:	One octa of altostratus base 14000 feet 18°C

1.1.19 A photograph taken at the time of the aircraft's last run over the spectators established the aircraft at a level of some 50 feet agl as it passed a tree, which was alongside the lower end of the strip, on its last flight over the spectators.

1.1.20 The pilot stated that the aircraft was performing normally. An onsite inspection indicated that there were no airframe defects and the engine was driving the propeller at the time of impact. A subsequent strip examination of the engine found no evidence of any failure which would have prevented the engine from running normally.

1.1.21 The pilot gave a frank and coherent account of events which indicated that after the first two runs over the students he had decided to approach them from a different direction. Although he had surveyed the general area he did not appreciate that his turn after the low pass up the strip was toward an area which was unfavourable for a go-around.

1.1.22 Once in the confined area he realised his predicament and attempted to use the available features to minimise the consequences of the inevitable accident. He turned the aircraft towards the right hand side and flew as close as practicable to that side of the gully before reversing the turn and aiming the aircraft towards an area of trees. Just before the impact he throttled the engine back and stalled the aircraft.

2. FINDINGS

- 2.1 The pilot was appropriately qualified for a private scenic flight with a passenger.
- 2.2 Medical incapacitation was not a factor in the accident.
- 2.3 The aircraft was airworthy.
- 2.4 The weather was not a factor in the accident.
- 2.5 The pilot made an unauthorised low level display flight.
- 2.6 The low level flight involved flying over the spectators.
- 2.7 A low level flight over spectators would not have been approved as this type of flying was recognised as hazardous and had led to death and serious injuries to third parties.
- 2.8 Low flying with passengers was specifically barred by Regulation.
- 2.9 The low level of the flight was a cause factor in the accident.
- 2.10 The airstrip over which the pilot flew had no go-around path for landings in the uphill direction.
- 2.11 The valley into which the aircraft was flown at low level, immediately after passing over the airstrip, was of insufficient width for the aircraft to be turned to fly on a reciprocal track.
- 2.12 The slope of the valley confines was in excess of the achievable angle of climb for the aircraft involved.
- 2.13 The pilot's decision to make a low pass over the airstrip in the uphill direction without first determining the terrain ahead was the fundamental cause of this accident. Contributory causes were the decision to conduct a display, inadequate preparation for a low level display and pilot disorientation during a low level flight.

3. OBSERVATION

- 3.1 Unauthorised low level displays, before friends and relatives, continue to take the lives of pilots and innocent parties alike.
- 3.2 Although the pilot realised that he had made a serious error of judgement when he found the aircraft heading up a confined gully with no avenue for escape he kept his head and tried to make the most of the intimidating environment.
- 3.3 Despite the loss of a life as a result of his actions the pilot had the strength of character to describe events as he recalled them and thus facilitated the completion of the safety investigation into this accident with a minimum of unnecessary expenditure and time.

4. SAFETY RECOMMENDATIONS

- 4.1 As a result of the investigation of this accident it was recommended to the Ministry of Transport that they consider distributing a series of posters to emphasise the dangers of low flying with passengers, low flying without preplanning and impromptu displays to all aircraft licence holders.

5. REGULATORY

- 5.1 Pursuant to Section 14(5) of the Transport Accident Investigation Commission Act 1990 the legal personal representatives of the pilot in command of ZK-KVM were invited to avail themselves of the opportunities afforded to them thereunder.
- 5.2 As a result of representations received the report was amended and amplified to clarify some of the points raised.
- 5.3 The representations made to the undersigned are not to be taken as an admission of liability on the part of the parties concerned and their statements are without prejudice to their right to act in any way they may consider fit in any proceedings or action which may be based on the events to which this report refers.

12 March 1992

M F DUNPHY
Chief Commissioner