

**Report 07-003, Piper PA32S-300 Cherokee 6, ZK-DOJ, departed grass
airstrip on landing, Elfin Bay, Lake Wakatipu, 5 April 2007**

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Report 07-003

Piper PA32S-300 Cherokee 6

ZK-DOJ

departed grass airstrip on landing

Elfin Bay, Lake Wakatipu

5 April 2007

Abstract

On Thursday 5 April 2007, ZK-DOJ, a Piper PA32S-300 Cherokee 6, was on a local charter flight from Queenstown with a pilot and 2 passengers on board. The flight was to include a landing and short stopover at Elfin Bay on the shores of Lake Wakatipu, before returning to Queenstown. During the landing at Elfin Bay, the pilot deliberately steered the aircraft off the side of the airstrip to avoid overrunning the end. The aircraft struck a fence and sustained moderate damage but there was no injury to the passengers or pilot.

The safety issues identified were aircraft braking technique and the need for a serviceable windsock to allow a pilot to make a more accurate assessment of the wind conditions. Safety recommendations were made to the Director of Civil Aviation to address these issues.



**Piper PA32S Cherokee ZK-DOJ
after landing at Elfin Bay**

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Abbreviations

ATIS	automatic terminal information service
C	Celsius
CAA	(New Zealand) Civil Aviation Authority
CAR	Civil Aviation Rule(s)
cm	centimetre(s)
ELT	emergency locator transmitter
kg	kilogram(s)
km	kilometre(s)
kt	knot(s)
lb	pound(s)
m	metre(s)
METAR	routine weather report
UTC	Coordinated Universal Time

Glossary

QNH	altimeter subscale setting to obtain elevation above mean sea level
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Data Summary

Aircraft registration:	ZK-DOJ
Type and serial number:	Piper PA32S-300, 32S-40638
Number and type of engines:	1 Lycoming IO-540-K1A5
Year of manufacture:	1969
Operator:	Glenorchy Air Services and Tourist Company Limited (trading as Glenorchy Air)
Date and time:	5 April 2007, about 1100 ¹
Location:	Elfin Bay, 30 km west of Queenstown latitude: 44° 57.15' south longitude: 168° 20.8' east
Type of flight:	commercial transport, non-scheduled
Persons on board:	crew: 1 passengers: 2
Injuries:	crew: nil passengers: nil
Nature of damage:	moderate to undercarriage, engine and right wing
Pilot's licence:	Commercial Pilot Licence (Aeroplane)
Pilot's age:	44
Pilot's total flying experience:	2404 hours (470 hours on type)
Investigator-in-charge:	Ian M ^c Clelland

¹ Times in this report are New Zealand Standard Time (UTC + 12 hours) and are expressed in the 24-hour mode.

1 Factual Information

1.1 History of the flight

- 1.1.1 On Thursday 5 April 2007, Glenorchy Air Services and Tourist Company Limited (the operator) was chartered to fly 2 passengers on a local scenic flight from Queenstown Aerodrome. The plan was to complete one of the operator's standard local flights, which would take the passengers to overhead Mount Aspiring, followed by a landing and short stopover at the mouth of Greenstone Valley before returning to Queenstown. The aircraft allocated for the flight was ZK-DOJ, a Piper PA32S-300, commonly known as a Cherokee 6. The flight, including the landing, was scheduled to take about 2 hours (see Figure 1).
- 1.1.2 The pilot gave the passengers a safety briefing. The passengers were then seated in the aircraft, one in the rear row of seats and the other in the front right next to the pilot. The flight departed Queenstown at about 1010 and proceeded uneventfully to the Mount Aspiring area. The pilot later reported that the weather conditions were suitable for the flight, with an estimated 5 to 10 knot (kt) south-westerly wind aloft and a small amount of high cloud.
- 1.1.3 After circling Mount Aspiring the flight continued down Rees Valley, descending as it flew past Paradise and Glenorchy to Lake Wakatipu. The pilot noted that the lake surface appeared calm, with no indications of any wind in the area. At about 1100, the pilot positioned ZK-DOJ to overfly the airstrip at Elfin Bay so he could check the landing area and conditions. The pilot noted that "everything seemed fine – there was no wind at all". The pilot then positioned ZK-DOJ on a left base to land towards the north (see Figure 2).
- 1.1.4 The pilot said that the approach was stable and he held the aircraft speed at "just below 80 miles per hour", about 70 kt, with full flap selected. He closed the throttle as the aircraft was about to land, by which time the speed had reduced to about 65 kt. ZK-DOJ landed near the intended touchdown point. The pilot and passengers all commented that the landing was firm and, though the aircraft didn't bounce, there was some bumping around and the aircraft became light on the wheels before settling down again. The pilot reported that at this time he raised the flap to help reduce the lift generated by the wings and to put increased weight on the wheels to assist in the braking action. He also immediately started applying aircraft brakes. The pilot and passengers recalled an initial deceleration consistent with the application of brakes.
- 1.1.5 The pilot continued to apply pressure to the brakes as ZK-DOJ travelled along the airstrip. The pilot commented that part-way down the airstrip he became concerned that the aircraft would not come to a halt before the end, so he attempted to ground loop² the aircraft. The pilot reported that he applied full left rudder and gave a short burst of power to help turn the aircraft to the left. He closed the throttle as the aircraft started to turn and instructed the passengers to brace themselves. He then pulled the mixture lever through to cut-off to shut down the engine. The aircraft veered left off the side of the airstrip and struck a fence, rotating further left as it did so. The occupants estimated that the aircraft was at about a jogging speed when it struck the fence.
- 1.1.6 The pilot checked that the passengers were uninjured and tried calling for assistance on the local radio frequencies. At 1125, he was able to contact another pilot flying in the area, who relayed the situation to the operator's base. A second company aircraft was dispatched from Queenstown and arrived at Elfin Bay at about 1200. The pilot of the second aircraft, a different type to ZK-DOJ, later reported that he landed and slowed his aircraft to a taxi speed in a little over half the landing distance available. The pilot and passengers were then returned to Queenstown. ZK-DOJ was subsequently airlifted to a maintenance facility for repair.

² Ground looping is the term used to describe an aircraft rotating 180° about its normal or vertical axis while continuing on the same general track along the ground. The rotation can be either intentional or not.

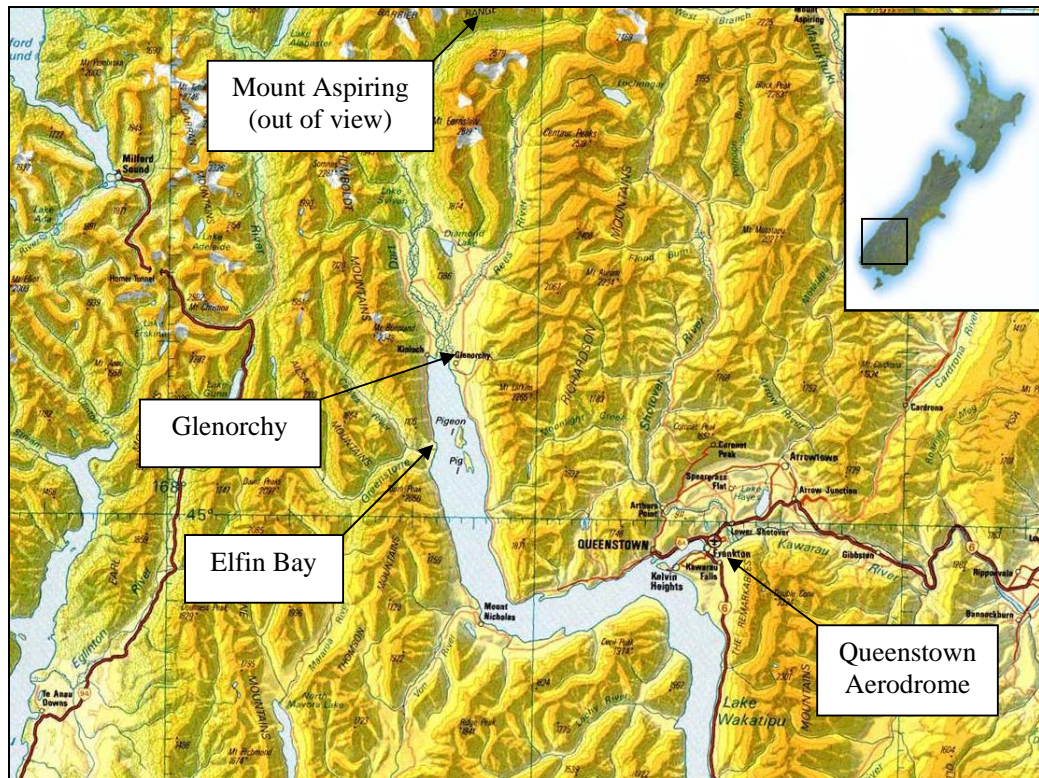


Figure 1
Location map

1.2 Injuries to persons

1.2.1 No one on board was injured.

1.3 Damage to aircraft

1.3.1 The damage consisted mainly of scrapes and dents to the right wing and propeller. The nose landing gear, engine firewall and engine mounting frame were twisted, probably by side loads on the nose wheel.

1.4 Other damage

1.4.1 A short section of fencing was broken.

1.5 Personnel information

1.5.1 pilot:	aged 44
licences and ratings:	Commercial Pilot Licence (Aeroplane) C category instructor rating multi-engine instrument rating
aircraft ratings:	Cessna C172, Gippsland GA8, Piper PA32
medical certificate:	Class 1, effective 4 March 2007 and valid until 4 September 2007
last annual competency check:	16 January 2007
route and aerodrome check:	9 October 2006

flying experience:	all types	2404 hours
	PA32	470 hours
	last 90 days	111 hours (including 53 in ZK-DOJ)
	last 7 days	9.7 hours (all in ZK-DOJ)
duty time:	3 hours	
rest before duty:	14 hours	

1.5.2 The pilot joined the operator in August 2002, was employed full-time and was qualified on the 3 types of aircraft the operator flew. His last route and aerodrome check was on 9 October 2006. Records showed he landed at Elfin Bay on 20 March 2007 and 2 April 2007, flying ZK-DOJ on both occasions.

1.5.3 The pilot was on his 5th day of rostered duty and reported that he was in good health and well rested at the start of duty on 5 April 2007.

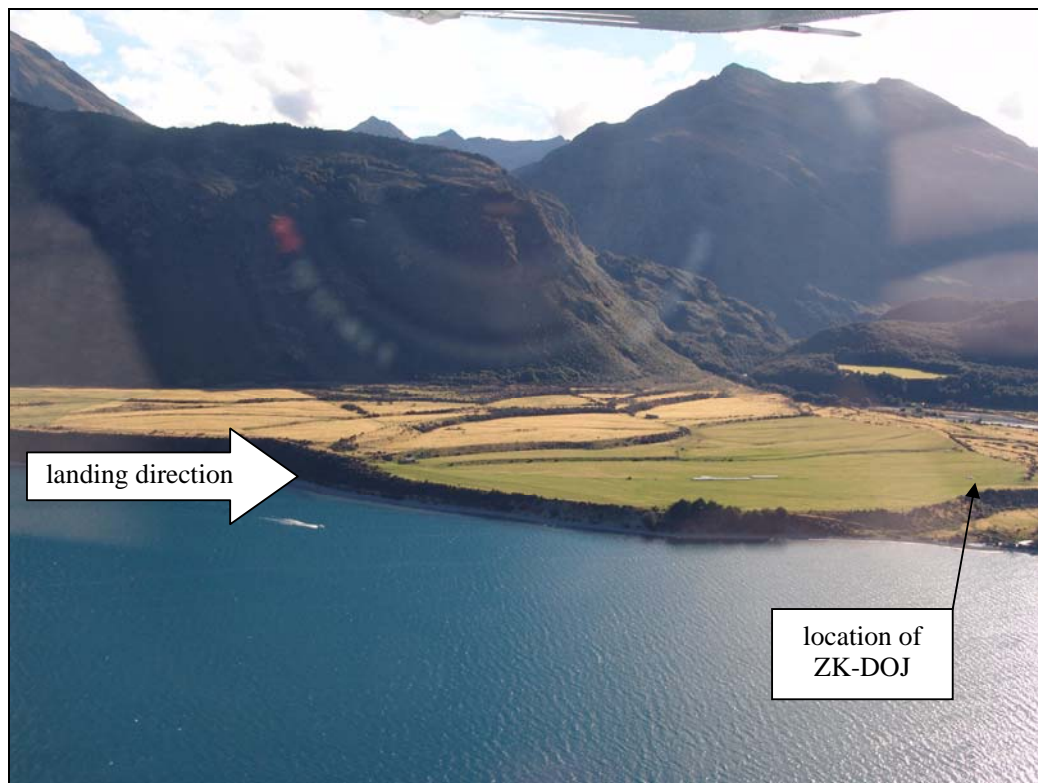


Figure 2
Elfin Bay airstrip – aerial view

1.6 Aircraft information

1.6.1 ZK-DOJ was a Piper PA32S-300, serial number 32S-40638, constructed in the United States in 1969. The aircraft was a light, low wing aeroplane with seating for 6 people in 3 rows. It was powered by a single Lycoming IO-540-K1A5 reciprocating engine.

1.6.2 The aircraft was originally manufactured as a floatplane. Following an accident overseas in about December 1972, it was repaired and fitted with a fixed tricycle undercarriage. It was imported and first registered in New Zealand in July 1973. The operator purchased the aircraft in June 1996.

- 1.6.3 ZK-DOJ was issued with a standard category Certificate of Airworthiness. The certificate was non-terminating provided the aircraft was maintained and operated in accordance with the approved maintenance and operating manuals.
- 1.6.4 A review of the maintenance records for ZK-DOJ showed that the last scheduled servicing, a 50-hour check, was undertaken on 16 March 2007 when the aircraft had flown 6440 hours. The check was completed in accordance with the operator's maintenance manual. The next inspection was due at 6486 hours. The last Annual Review of Airworthiness was completed on 26 July 2006. At the time of landing at Elfin Bay, ZK-DOJ had flown 6469 hours. There were no outstanding defects recorded.
- 1.6.5 In December 2005 the 2-bladed propeller then fitted to ZK-DOJ was replaced with a 3-bladed Hartzell propeller for increased take-off, climb and cruise performance. The basic weight of the aircraft increased by 14.2 pounds (lb) (6.5 kg) as a result. ZK-DOJ had a certified maximum take-off and landing weight of 3400 lb (1545 kg). A review of the aircraft's load sheet prepared by the pilot for the flight on 5 April showed the calculated take-off weight at Queenstown to be 2837 lb and the planned landing weight at Elfin Bay to be 2720 lb.
- 1.6.6 However, the load sheet referred to a basic weight of 1894 lb, the weight prior to the fitment of the new propeller. The planned weights were therefore 14.2 lb lighter than actual. The landing weight at Elfin Bay, based on the updated basic weight of 1908.2 lb and actual fuel found remaining in the aircraft's tanks, was 2 lb lighter than planned, at 2718 lb. The centre of gravity was calculated to be within limits for both take-off and landing.
- 1.6.7 ZK-DOJ was fitted with hydraulically actuated disc brakes on the 2 main landing gear wheels. To activate the brakes, the pilot applied forward pressure to the toes of the rudder pedals, either individually for the left or right brake, or together for even braking on both.

Landing performance

- 1.6.8 The landing performance for ZK-DOJ on 5 April was calculated using charts provided by the aircraft manufacturer for the PA32-300, the land-based version of the PA32S-300. The manufacturer advised that there should be no difference in landing performance between the 2 aircraft types. The total landing distance required from a 50 feet height at the start of the landing area, with no wind, using full flap and maximum braking on a dry paved runway was about 820 feet (250 m). The landing roll distance for the same conditions was calculated at about 550 feet (168 m).
- 1.6.9 To obtain the distances for a grass airstrip, the practice was to use Civil Aviation Safety Order 4, Part 1, Section 4 – Surface Corrections Factors, and divide the distances previously calculated using the charts by 0.79. This gave an equivalent total landing distance required of about 1040 feet (315 m), and a landing roll of about 695 feet (212 m).
- 1.6.10 Civil Aviation Rules (CAR) Part 135 directed that for a dry runway an operator was to ensure that the airstrip allowed “a full-stop landing from 50 feet above the threshold within 85% of landing distance available”. For wet and contaminated runways, “the landing distance available is at least 115% of the landing distance required”.³ This equated to 1195 feet (362 m), or 75% of the landing distance available at the Elfin Bay airstrip.

1.7 Meteorological information

- 1.7.1 On Thursday 5 April 2007, an intense anticyclone was positioned over the Tasman Sea with a ridge extending across the South Island. Winds were generally light and a satellite picture taken at 1100 on 5 April showed that little cloud was present.

³ CAR Part 135.223 and 135.225, effective 1 March 2007.

- 1.7.2 The Queenstown routine weather report (METAR) issued at 0800 reported the surface wind as 040° True at 6 kt, 50 km visibility and scattered⁴ cloud at 2500 feet above the aerodrome. The temperature was 3° Celsius (C) with a dew point of 2° C. The aerodrome QNH pressure reading was 1018 hectopascals.⁵ Fog patches were reported over the nearby Kawerau River.
- 1.7.3 The Queenstown Aerodrome automatic terminal information service (ATIS) reports for the morning of 5 April were obtained. The reported conditions were similar to the 0800 METAR, including the surface wind of north-easterly or variable at between 2 and 5 kt. The 2000-foot wind was forecast to be south-westerly at 10 kt.
- 1.7.4 The Meteorological Service of New Zealand provided a summary of the likely conditions at Elfin Bay for 4 and 5 April as follows:

Observations from nearby weather stations imply dew would have formed in the area of Elfin Bay overnight. Dew occurs when the lowest levels of the atmosphere come into contact with a cold surface to the point where it cannot hold all the water vapour. This vapour condenses to liquid water droplets and is deposited on the cold surface. Note the minimum grass temperature measured at Wanaka Airport that morning was minus 2.8° C.

To clear dew and dry the ground, water droplets need to warm enough to change state back into vapour and then be in contact with air which is dry enough to hold more water vapour.

Sunrise was at approximately 0700 and it is estimated the sun reached the airstrip at 0755. Air and grass temperature increase between 0700 and 0900 at Wanaka confirm this and indicate water droplets and the air near the ground began heating. However, a lack of wind would have inhibited mixing of dry air down to the surface to carry away water vapour. This would have slowed the clearance of dew.

1.8 Communication

- 1.8.1 On 5 April 2007 the pilot of ZK-DOJ completed a company flight plan form that was retained at the operator's office at Queenstown. The form recorded the details for the flight, including an estimated time of arrival back at Queenstown and a time after which search and rescue actions should be initiated, referred to as SARTIME.
- 1.8.2 Once clear of the controlled airspace around Queenstown Aerodrome, pilots would listen out on the local common frequency of 119.2 megahertz. The pilot of ZK-DOJ was able to contact a passing aircraft on the local common frequency and inform the operator of the situation before the SARTIME was reached.
- 1.8.3 The aircraft emergency locator transmitter (ELT) did not activate during the landing sequence, nor would it have been expected to, considering the forces encountered.

1.9 Airstrip information

- 1.9.1 The Elfin Bay airstrip was located on a terrace near the mouth of Greenstone River, on the western shores of Lake Wakatipu. The airstrip was privately owned and the operator had permission to use it while a second airstrip located nearby was being used for winter feed for stock.

⁴ Cloud was measured in eighths, with scattered being 3 to 4 eighths of the sky being covered by cloud.

⁵ Aerodrome QNH is the aerodrome level pressure reading reduced to mean sea level in accordance with the standard atmosphere. This provides a common altitude reference for aircraft in the local area. Hectopascals are the standard unit of pressure measurement.

- 1.9.2 The single grass airstrip was orientated 320° magnetic and had a 0.5° upslope when landing to the north – the direction ZK-DOJ was landed. It had an elevation of 1160 feet above sea level. Unobstructed approaches allowed take-offs and landings in both directions.
- 1.9.3 The airstrip was contained within a larger paddock and was marked by white painted tyres along the eastern side and bounded by a stock fence on the western side. Two white painted posts lay on the ground marking the northern end, about 30 m before a drop-off down to the river fan area. The start of the southern end of the airstrip was marked by a tyre positioned about 35 m in from the fence. The airstrip length from this tyre to the white posts was measured as about 480 m (about 1575 feet).
- 1.9.4 A cone set inside a second tyre about 50 m along from the first tyre helped identify the touchdown area. The area between the first 2 tyres was undulating with 1 to 1.5 m rise and falls, but generally flat near the centre of the airstrip (see Figure 3).
- 1.9.5 A windsock was located along the stock fence, about midway down the airstrip. However, the fabric had frayed to the extent that the sock was ineffective as a wind indicator.
- 1.9.6 The airstrip was not mown, but was occasionally grazed by stock to keep the height of the grass down. Examination of the airstrip shortly after the accident confirmed the surface to be hard. Grass length varied between 8 and 15 cm and was undersown with clover which varied between 5 and 12 cm high.
- 1.9.7 The airstrip was shaded from the sunrise by the mountains on the eastern shore of the lake. On the day of the accident, direct sunlight was calculated to have reached the airstrip at about 0800. Witnesses reported that, as they walked along the airstrip at about midday on the day of the accident, their shoes became wet from the moisture in the grass.
- 1.9.8 ZK-DOJ was the first aircraft to land on the airstrip on the day of the accident.

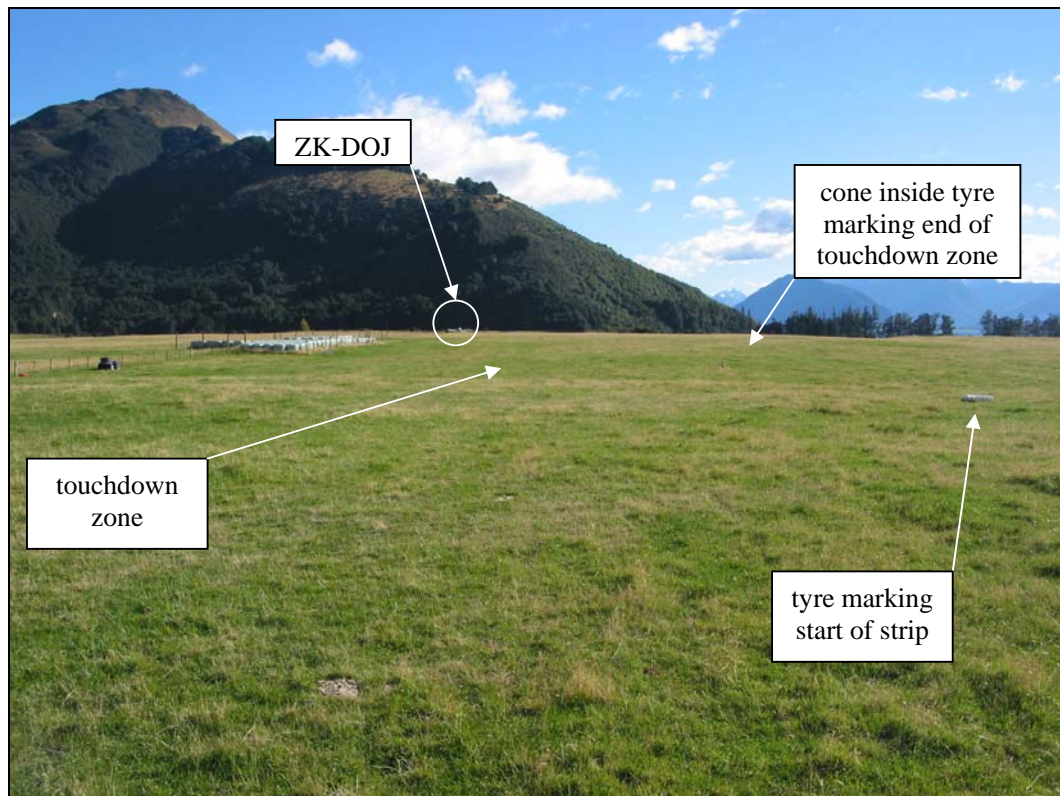


Figure 3
Elfin Bay airstrip – looking north

1.10 Flight recorders

1.10.1 ZK-DOJ was not fitted with a flight recorder, nor was it required to be.

1.11 Wreckage and impact information

1.11.1 ZK-DOJ had struck the fence on the left side of the airstrip about 25 m short of the end marker posts. The aircraft was on a heading of about 100° magnetic. The aircraft had sustained damage, primarily to its right side. The damage included scraping on the leading edge and underside of the right wing. The nose wheel was bent to the left and there was some buckling to the firewall and engine mounting area. The propeller had scrape marks and chips in the leading edges of 2 of the 3 blades.

1.11.2 Two metal fence posts were either bent or broken and several wire strands were also broken. Additional wires had been cut to facilitate the removal of the aircraft. Some partially buried rocks along the fence line had been dislodged, possibly by the nose wheel.

1.11.3 Photographs taken using the passengers' camera, about one hour after the landing and before the second aircraft had landed, showed 3 wheel tracks running along the airstrip and terminating at the aircraft. The measurements of the tracks matched the landing gear dimensions of ZK-DOJ, and commenced about abeam the touchdown cone and initially ran along the centre of the airstrip. At about 290 m along the airstrip, the tracks started veering to the left (see Figure 4).

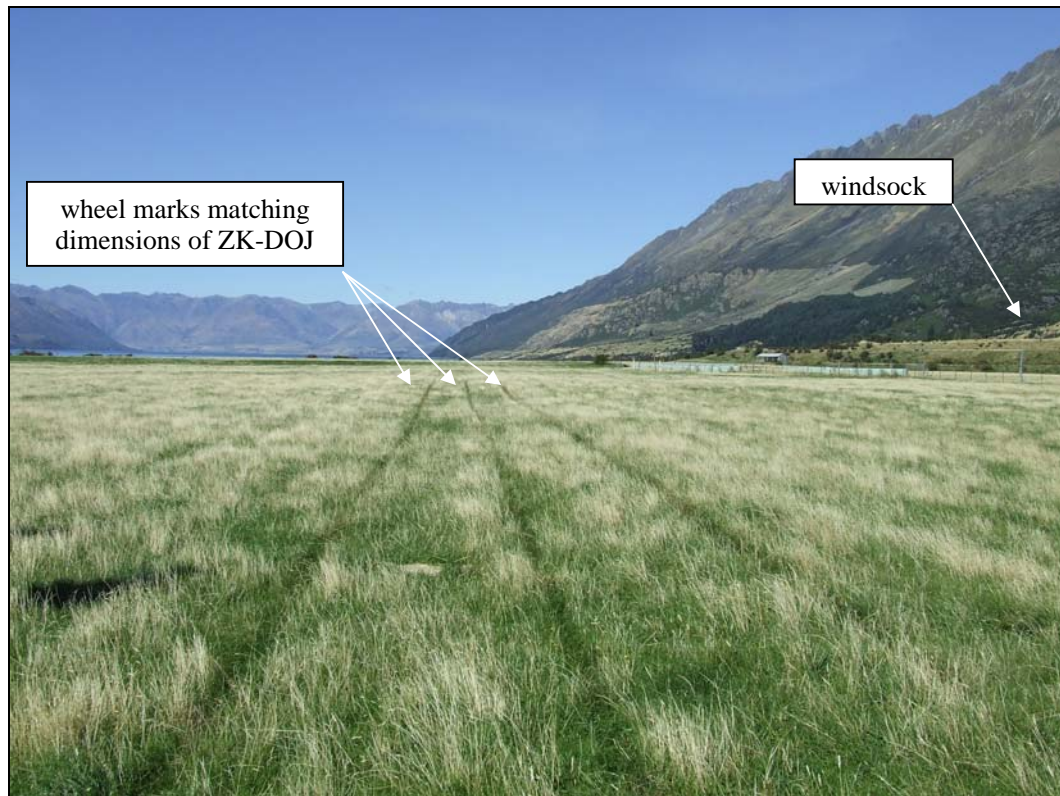


Figure 4
Elfin Bay airstrip – looking south

1.11.4 Closer examination of the tracks showed a distinct change in the characteristics of the ground marks after about 40 m. For the first 40 m the grass was rolled over; after that point it was also bruised or burnt-like. This later characteristic continued as the tracks veered left and became crossed up as the aircraft started rotating.

- 1.11.5 An independent engineer examined ZK-DOJ before it was removed from the airstrip. The engine was able to be started easily and idle speed was determined to be within normal limits. The aircraft braking system was examined and was considered by the engineer to be functioning normally.
- 1.11.6 The 2 main tyres were found to be inflated and tyre pressure was determined to be between 35 and 40 lb per square inch, which was within the acceptable limits.

1.12 Organisational and management information

- 1.12.1 The operator was established in 1992 and held an air operators certificate issued under CAR Part 119, Air Operator – Certification. The certificate permitted operations in accordance with CAR Part 135, Air Operations – Helicopters and Small Aeroplanes, and was endorsed for commercial transport to remote aerodromes.⁶
- 1.12.2 The operator was based at Queenstown Aerodrome and conducted charter flights, including scenic flights to remote aerodromes or airstrips around the local area. The operator held a register of remote airstrips that were approved for use by the operator’s pilots. At the time of the accident, the operator employed 2 pilots full-time and 2 pilots part-time, and operated 3 aircraft including ZK-DOJ.
- 1.12.3 Flight testing of the operator’s pilots was performed by a Civil Aviation Authority (CAA) approved flight testing organisation. The operator’s Operations Manager, a CAA approved Flight Examiner, undertook any routine training, including annual competency assessments and route checks. Pilots were required to be checked on the use of each remote airstrip before being approved to operate into them. An additional endorsement was required for flights into Milford Sound. The pilot had been checked and approved for operations using Elfin Bay soon after joining the operator.

2 Analysis

- 2.1 The flight was a routine charter flight and proceeded uneventfully until landing at Elfin Bay. Shortly after touchdown and having applied braking, the pilot recognised that the aircraft was not slowing as expected and as a consequence was travelling too fast to be able to safely come to a halt before the end of the airstrip. The final resting place of ZK-DOJ, the estimated speed at which it struck the fence and the damage sustained supported this view.
- 2.2 By the time the pilot recognised his predicament, the aircraft speed would have been too slow and the length of strip remaining too short to allow for a safe go-around. The latest point that the pilot could have safely commenced a go-around would have been at touchdown – ideally earlier.
- 2.3 The pilot’s attempt to ground loop the aircraft to the left before the end of the airstrip was partly successful. The inherent directional stability of a conventional tricycle landing gear meant that a full ground loop would have been difficult to achieve. However, veering left was the safest direction to proceed with a steep drop-off at the end and right side of the airstrip.
- 2.4 The airstrip met the CAA requirements for commercial operations and was sufficiently long for most conditions. On the day of the incident, allowing for wet or contaminated conditions, the airstrip was still sufficiently long for a safe landing to be made. The pilot’s selection of landing direction was understandable. There was no wind observed on the lake or airstrip and, by overflying the airstrip and positioning for a left base, he was able to continue observing the airstrip throughout the approach.

⁶ Remote aerodromes included an area used for take-off and landings to which access by road or water was restricted, limited or obstructed by geographical conditions, and which did not meet the normal standard for an aerodrome.

- 2.5 The evidence indicated that the approach and touchdown were competently flown by the pilot. He touched down in the desired landing area and should have had sufficient distance to bring the aircraft to a halt before the end of the airstrip. The pilot used a recognised technique for landing on a limited length landing area by raising the flap and starting braking action immediately on landing.
- 2.6 The reported calm conditions meant that the aircraft ground speed on landing would have been higher than with a headwind. This may have influenced the pilot's concern about stopping before the end of the strip and so he kept pressure applied to the brake pedals. Considering the south-westerly winds aloft, the possibility of a small tailwind occurring at the time of landing, while unlikely, cannot be excluded. Any tailwind component would have further increased the aircraft landing ground speed. The lack of a functioning windsock meant that the pilot was unable to complete an accurate wind assessment when either overheard or on short finals. A safety recommendation was made regarding this issue.
- 2.7 By the time the pilot landed ZK-DOJ at Elfin Bay, the sun would have been shining on the airstrip for about 3 hours. This could lead to an expectation that the grass would be dry and have good braking action available. However, the intensity of the overnight dew and the length of the grass with thick clover underneath meant that moisture was retained below the surface for a significantly longer period than envisaged.
- 2.8 The wheel marks showed that the pilot started braking shortly after landing. The change in characteristics of the wheel marks also showed that the wheels locked up about 40 m after braking had started and remained locked until exiting the side of the airstrip. Though the grass was dry on top, the damp foliage underneath, combined with the hard surface, would have created a slick contact surface for the wheels. This significantly reduced the effectiveness of the brakes.
- 2.9 To have mitigated the effects of the moisture and poor braking action, the pilot should have released pressure on the brakes to ensure the wheels were able to rotate, and then reapplied braking pressure. By repeating this action as the aircraft slowed he could have ensured that the maximum braking effect possible was achieved. The pilot was aware of this technique, but he appeared to have focused on the fast approaching end of the strip and subconsciously applied continuous full braking pressure, thereby keeping the wheels locked up until it was too late.

3 Findings

Findings are listed in order of development and not in order of priority.

- 3.1 The pilot was licensed, approved and fit to conduct the flight. He was also familiar with the Elfin Bay airstrip.
- 3.2 ZK-DOJ was serviceable and suitable for the flight.
- 3.3 The Elfin Bay airstrip was suitable for commercial transport operations using the type of aircraft flown, and had sufficient distance to land ZK-DOJ safely had the pilot used the appropriate braking technique.
- 3.4 The weather conditions were suitable for the flight and landing at Elfin Bay. However, a heavy dew during the night meant that the grass remained damp underneath the surface for longer than was normal.
- 3.5 After touchdown, the pilot's continuous application of brakes caused the wheels to lock up on the wet grass, reducing braking effectiveness.
- 3.6 The pilot, recognising he was unlikely to stop before the end of the strip, chose the best option of turning left off the strip towards the fence.
- 3.7 The unserviceable windsock deprived the pilot of the opportunity to accurately assess the wind conditions and denied him the opportunity to detect any possible tailwind component.

4. Safety Recommendations

Safety recommendations are listed in order of development and not in order of priority.

4.1 On 25 February 2008, the Commission recommended to the Director of Civil Aviation that he:

053/07 use this accident to educate pilots on appropriate landing and braking techniques, especially for remote and restricted length aerodromes.

054/07 require operators to provide an approved serviceable wind indicating device at remote airstrips used frequently for commercial operations, to allow pilots to accurately assess wind conditions for take-off and landing.

Approved on 20 March 2008 for publication

Hon W P Jeffries
Chief Commissioner.



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07-009	Raytheon 1900D, ZK-EAH and Raytheon 1900D, ZK-EAG, critical runway incursion, Auckland International Airport, 1 August 2007
07-004	Boeing 737-300, aircraft filled with smoke, north of Ohakea, en route Wlg-Akl, 3 May 2007
06-003	Boeing 737-319, ZK-NGJ, electrical malfunction and subsequent ground evacuation, Auckland, 12 September 2006
06-008	Piper PA23-250-E Aztec ZK-PIW, , landing gear collapse, Ardmore Aerodrome, 21 December 2006
07-001	Boeing 777 A6-EBC, incorrect power and configuration for take-off, Auckland International Airport, 22 March 2007
06-006	ZK-MYF, Partenavia P68B, loss of engine power, Takapau, 2 December 2006
06-004	Robinson R44 <i>Raven</i> ZK-HUC, wire strike, Motukutuku Point, near Punakaiki, Westland, 9 November 2006
06-002	Piper PA 23-250 Aztec, ZK-FMU, wheels-up landing, Napier Aerodrome, 13 April 2006
05-006	Fairchild-Swearingen SA227-AC Metro III ZK-POA, Loss of control and in-flight break-up, near Stratford, Taranaki province, 3 May 2005
05-008	Cessna U206G, ZK-WWH, loss of control on take-off, Queenstown Aerodrome, 10 August 2005
01-005R	Bell UH-1H Iroquois ZK-HJH, in-flight break-up, Taumarunui, 4 June 2001
05-010	Aerospatiale-Alenia ATR 72-500, ZK-MCJ, runway excursion, Queenstown Aerodrome, 5 October 2005
05-003	Piper PA34-200T Seneca II, ZK-FMW, controlled flight into terrain, 8 km north-east of Taupo Aerodrome, 2 February 2005
05-002	Cessna 172, ZK-LLB, collision with terrain while low flying, 7 km south of Gibbston, 29 January 2005

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