



Transport Accident
Investigation
Commission

Final report

Tuhinga whakamutunga

Aviation inquiry AO-2025-001
Airbus AS350 B3 helicopter, ZK-ITY
Impact with terrain
Mt Madeline, 7 km east of Milford Sound
12 January 2025

November 2025



The Transport Accident Investigation Commission

Te Kōmihana Tirotiro Aituā Waka

No repeat accidents – ever!

“The principal purpose of the Commission shall be to determine the circumstances and causes of accidents and incidents with a view to avoiding similar occurrences in the future, rather than to ascribe blame to any person.”

Transport Accident Investigation Commission Act 1990, s4 Purpose

The Transport Accident Investigation Commission is an independent Crown entity and standing commission of inquiry. We investigate selected maritime, aviation and rail accidents and incidents that occur in New Zealand or involve New Zealand-registered aircraft or vessels.

Our investigations are for the purpose of avoiding similar accidents and incidents in the future. We determine and analyse contributing factors, explain circumstances and causes, identify safety issues, and make recommendations to improve safety. Our findings cannot be used to pursue criminal, civil, or regulatory action.

At the end of every inquiry, we share all relevant knowledge in a final report. We use our information and insight to influence others in the transport sector to improve safety, nationally and internationally.

Commissioners

Chief Commissioner	David Clarke
Deputy Chief Commissioner	Stephen Davies Howard
Commissioner	Paula Rose, QSO
Commissioner	Bernadette Roka Arapere

Key Commission personnel

Chief Executive	Martin Sawyers
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Notes about Commission reports

Kōrero tāpiri ki ngā pūrongo o te Kōmihana

Citations and referencing

The citations section of this report lists public documents. Documents unavailable to the public (that is, not discoverable under the Official Information Act 1982) are referenced in footnotes. Information derived from interviews during the Commission's inquiry into the occurrence is used without attribution.

Photographs, diagrams, pictures

The Commission owns the photographs, diagrams and pictures in this report unless otherwise specified.

Verbal probability expressions

For clarity, the Commission uses standardised terminology where possible.

One example of this standardisation is the terminology used to describe the degree of probability (or likelihood) that an event happened, or a condition existed in support of a hypothesis. The Commission has adopted this terminology from the Intergovernmental Panel on Climate Change and Australian Transport Safety Bureau models. The Commission chose these models because of their simplicity, usability, and international use. The Commission considers these models reflect its functions. These functions include making findings and issuing recommendations based on a wide range of evidence, whether or not that evidence would be admissible in a court of law.

Terminology	Likelihood	Equivalent terms
Virtually certain	> 99% probability of occurrence	Almost certain
Very likely	> 90% probability	Highly likely, very probable
Likely	> 66% probability	Probable
About as likely as not	33% to 66% probability	More or less likely
Unlikely	< 33% probability	Improbable
Very unlikely	< 10% probability	Highly unlikely
Exceptionally unlikely	< 1% probability	



Figure 1: Airbus AS350 B3, ZK-ITY
(Credit: Te Anau Helicopter Services Limited)



Figure 2: Location of accident

(Source: Land Information New Zealand Toitū Te Whenua)

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1 Executive summary

Tuhinga whakarāpopoto

What happened

- 1.1. On 12 January 2025, a pilot and a single ground crew using an Airbus AS350 B3 helicopter, ZK-ITY (the helicopter), based at Milford Sound Aerodrome, were tasked to collect two climbers from Turners Bivouac, 7 kilometres (km) east of Milford Sound. The landing site was at an altitude of 4900 feet (ft) on a plateau on the side of Mt Madeline.
- 1.2. The pilot located the two climbers and made an approach, positioning the helicopter over the landing site. The pilot reduced power to establish contact with the ground, intending to maintain sufficient power to keep the helicopter light on the skids and allow the ground crew to open a door and load the two climbers. As the helicopter started to settle on the rough ground it is **virtually certain** that a rock under the rear of the right skid broke, causing the helicopter's tail rotor to suddenly drop and strike a boulder located underneath it.
- 1.3. The pilot, concerned about potential damage to the helicopter, attempted to move the helicopter forward to a safe landing area. During this manoeuvre the main rotor struck a large boulder outcrop located to the right of the helicopter.
- 1.4. The damage to the main rotor blades caused the helicopter to shake violently. The pilot was able to shut down the engine and the helicopter came to rest. The pilot and ground crew were uninjured, and all four people were promptly recovered by another helicopter and taken to Milford Sound.

Why it happened

- 1.5. A small rough flat area had been built up using nearby rocks to create a suitable landing site for helicopters. The site had been successfully used over the preceding few years; however, it was a very confined area and pilots needed to take extra care when using it.
- 1.6. The pilot, being cautious, landed the helicopter further to the rear of the landing area than where other helicopters had previously landed. A rock under the rear of the right skid broke as the weight of the helicopter settled on it.
- 1.7. The pilot's decision not to attempt to fly away was appropriate, as the damage to the tail rotor and tail boom would **very likely** have resulted in an inflight breakup of the helicopter. However, while attempting to reposition the helicopter to shut down, the main rotor struck a large boulder outcrop causing further damage to the helicopter.

What we can learn

- 1.8. It is important that, when flying into remote and challenging landing sites, pilots exercise added caution and critically assess the suitability of the landing site, ensuring it is within the aircraft limits and their capabilities. This assessment also applies to operators in the allocation of tasks to pilots.

- 1.9. The operator's flight-following procedures, accident response plan and safety training programme helped ensure the climbers and crew were promptly and safely recovered from the mountain.

Who may benefit

- 1.10. Helicopter pilots, operators and their staff may benefit from this report.

2 Factual information

Pārongo pono

Narrative

- 2.1. On 11 January 2025, Te Anau Helicopter Services Limited (the operator) was engaged to take a climbing party from Milford Sound to Turners Bivouac on Mt Madeline. The party consisted of a mountain guide and their client. The plan was for the operator to return at 0900¹ on 13 January 2025 to uplift the two climbers. The operator's lead pilot² flew the two climbers to the site in the operator's Robinson R44 helicopter.
- 2.2. On 12 January 2025, the mountain guide contacted the operator to say that they had completed their climb early and would be ready for collection that afternoon. The operator agreed to collect them at 1630 from the same site at which they had been off-loaded. The helicopter allocated for the flight was an Airbus AS350 B3, registration ZK-ITY (the helicopter).
- 2.3. The pilot tasked for this job had not previously landed at this site and so contacted the operator's lead pilot, who had completed their day's duties and was at home, to discuss the proposed flight. Subsequently, the pilot and the lead pilot agreed that they would achieve a safer and more flexible operation by taking an additional ground crew person. This meant that after landing the ground crew could load and secure the two climbers while the pilot remained at the helicopter controls.³ The ground crew allocated to the flight was another of the operator's pilots.
- 2.4. During the afternoon the pilot flew a separate scenic flight, delivering some passengers to Lone Tree, a landing area east of Homer Tunnel, at 1635. After the off-loading of those passengers, the ground crew joined the pilot. The pilot sent a message to the operator via satellite text message that they were departing Lone Tree for Turners Bivouac with 35% fuel.⁴ They departed Lone Tree at 1641.
- 2.5. The flight to Turners Bivouac area took seven minutes. The helicopter circled the area while the pilot and ground crew located the two climbers and landing site. The plan was to approach directly into the landing site on the side of Mt Madeline, to minimise rotor downwash and keep the tail rotor clear of the waiting climbers. Then after positioning over the site, the pilot would land the helicopter but keep some power on to remain light on the skids and in control on the uneven ground. The ground crew would then exit the helicopter and help load the climbers and their equipment. The ground crew sat in the rear middle seat so that they could exit the helicopter from either side to facilitate loading.
- 2.6. Having sighted the two climbers, the pilot started a slow approach to the site. The climbers were crouched down to the left of the landing site for protection from the helicopter rotor downwash. The pilot, after coming to a hover over the general

¹ Times are in New Zealand Daylight Time (New Zealand Standard Time + 1 hour), which is coordinated universal time (UTC) +13 hours, and expressed in 24-hour format.

² A role defined in the operator's Operations Manual as being responsible for daily management of pilots and ground crew and can task a pilot for flying duties

³ A normal operation would be for the helicopter to be in idle, and the pilot would get out, load and secure the passengers, and then return to the operating seat.

⁴ Enough for just over one hour of flight time

landing area, used mirrors mounted below the nose of the helicopter to help position the skids over the rough surface, consisting of tussock grass and rocks.

- 2.7. After finding what they considered a suitable position, the pilot lowered the helicopter onto the landing site. As power was being reduced the helicopter suddenly lurched, pitching up at the front and turning to the left, as evidenced by the onboard camera footage. The pilot, concerned that the helicopter might be damaged, re-established the helicopter in a hover. During this manoeuvre the main rotor blades struck an object causing the helicopter to shake violently. As the helicopter was landed a second time it turned further to the left. The pilot shut the engine down and the helicopter came to rest. The time of the accident was 1654.
- 2.8. The ground crew left the helicopter to check on the wellbeing of the two climbers, who had escaped to cover and were uninjured. Both the pilot and ground crew were uninjured. The pilot contacted the operator to inform them of the accident and that there were no injuries.
- 2.9. The operator organised a recovery flight from Te Anau, landing near the accident site at 1758. The two climbers were taken to Milford Sound, about seven minutes away. The recovery pilot then returned and recovered the pilot and ground crew, landing back at Milford Sound at 1822.

Personnel information

- 2.10. The pilot held a Commercial Pilot Licence (Helicopter) and valid class 1 medical certificate. They had accrued 5300 total flying hours and 907 hours on this type of helicopter.
- 2.11. For the preceding two years, the pilot had travelled between New Zealand and Canada, typically flying to remote locations during the summer period in each country. In early November 2024, the pilot returned to New Zealand to rejoin the operator for another season based out of Te Anau and Milford Sound. The pilot completed their 'flight crew' and 'ground crew' authorisations and pilot competency check on 14 November 2024 before starting commercial operations.
- 2.12. The pilot had flown 51 hours in the preceding 90 days. At the time of the accident, the pilot had been on duty for 7 hours. They reported they were in good health and fit to fly.

Aircraft information

- 2.13. ZK-ITY was an Airbus⁵ Helicopters AS350 B3 helicopter, serial number 4949, manufactured in 2010. It was fitted with a single Safran Arriel 2B1 turboshaft engine.
- 2.14. The helicopter was imported into New Zealand in 2010 and issued with a certificate of airworthiness by the Civil Aviation Authority, which was non-terminating provided the helicopter was maintained and operated in accordance with the prescribed documents. The operator took possession of the helicopter in February 2020. Commission investigators reviewed the maintenance records, which showed that the helicopter was being maintained as required. The helicopter had about 76 hours to go

⁵ Previously known as Eurocopter Group. It was renamed in 2014 to Airbus Helicopters SAS.

until the next scheduled inspection, a 150-hour maintenance check. There were no defects relevant to the occurrence.

- 2.15. The AS350 B3 is a 7-place⁶ helicopter with a maximum permissible weight of 2250 kilograms (kgs). The basic weight⁷ for ZK-ITY was recorded as 1323.5 kg. Using the known weights and positions of the two occupants and the estimated fuel load, the helicopter was calculated to be within its weight and balance limits at the time of the accident.

Recorders

- 2.16. The helicopter was fitted with a Rugged Video LLC Eaglei 4K Cockpit video, audio and flight-data recorder. Video, audio and global positioning system (GPS) data from the accident flight were recovered.
- 2.17. The helicopter was also fitted with a commercial satellite-based tracking system, Spidertracks⁸, that sent regular position reports to the operator and could be accessed at each of the operator's bases. The reports included time, position, altitude and groundspeed information.

Site, weather and wreckage information

Site

- 2.18. Turners Bivouac is located on a plateau on the side of Mt Madeline at an elevation of about 4900 ft (1490 metres (m)) in the Darran Mountains and within Fiordland National Park. The bivouac sits on the side of a small terrace under a large rock overhang. A rock wall had been built up along the front to provide added protection against the elements (see Figure 3). The site is considered seasonal, which means it is not easily accessible in winter.
- 2.19. Near the bivouac is a flat area where climbers could pitch their tents if the bivouac was full. The flat area had been extended along its western side using rocks to create a landing site, allowing helicopters to land facing towards the mountainside and thus keeping the tail rotor clear of any people or obstacles.
- 2.20. If the landing site was occupied, pilots could position helicopters nearby to off-load or on-load. This might consist of touching down on part of the landing skids only or possibly remaining in a low hover.
- 2.21. Examination of the landing site identified a large flat rock that had broken in two. The rock measured about 0.5 m by 0.4 m and was about 0.15 m thick. The location of the rock on the edge of the landing site was about where the rear of the right skid would have been during a landing. Scrape marks were identified on the top surface of a boulder about 6 m out from the landing site. The boulder was below about where a tail rotor would be when a helicopter was landing at the site. Scrape marks were also found on the top of a large boulder outcrop to the right of the landing area.

⁶ The helicopter was fitted with a dual front seat to the left of the pilot.

⁷ Weight of the airframe and engines, fixed equipment and full oil tanks but not including fuel, passengers or baggage and cargo

⁸ Tracking and communication system, by Spider Tracks Limited, installed on aircraft to provide real time global positioning system (GPS) tracking and text-based communication via satellite between aircraft and operator



Figure 3: Accident site

Weather

- 2.22. Witnesses interviewed by Commission investigators, including those directly involved in the accident and others located at Milford Sound and Te Anau, all reported that the weather was fine and clear with little or no wind. The landing site was in full sun at the time of the accident.

Wreckage

- 2.23. The helicopter had come to rest about 2 m in from the edge of the landing site⁹, upright and on a heading of about 070° magnetic. The three main rotor blades each displayed damage, especially to the underside of the blades. The damage matched scrape marks on the flat upper surface of a large boulder outcrop on the right side of the landing area.
- 2.24. The tail boom was bent in several places and displayed numerous scrape marks. The tail rotor drive shaft displayed torsional damage.¹⁰ The direction of damage was consistent with the tail rotor drive shaft continuing to drive or turn at high speed after striking an object. The vertical fin at the rear of the helicopter, including the tail strike guard located at the bottom of the vertical fin, was undamaged. However, the ends of both tail rotor blades had been eroded.
- 2.25. The helicopter was removed from the site and taken to an engineering facility for a more detailed assessment of the damage. The helicopter was then dismantled in

⁹ Measured from the rear of the landing skids

¹⁰ Twisting of the shaft caused by applied force, in this case rotation of the tail rotor drive

preparation for possible repair. The maintenance logbooks record the helicopter had no outstanding defects.

Drug and alcohol testing

- 2.26. The operator had a drug and alcohol policy that included post-incident testing. After returning to Te Anau, the pilot requested immediate drug and alcohol testing. Both tests had negative (clear) results.

Organisational information

- 2.27. Te Anau Helicopter Services Limited is based at Manapouri Airport near Te Anau. It also has associated operations based at Milford Sound Airport and Bluff. It has a fleet of seven helicopters, comprised of five Airbus AS350s, one Hughes MD500E and one Robinson R44. It operates extensively throughout Fiordland and Southland, including Stewart Island, in tourism, adventure sport, heavy lift and conservation support.
- 2.28. The operator was approved to conduct commercial transport operations (CTOs).¹¹ This involved the carriage of passengers or goods by air for hire and reward to or from remote aerodromes,¹² such as Turners Bivouac. For the operator's pilots to be able to fly CTOs, they needed to be trained and authorised. CTOs were supported by guidance material included in the operator's Standard Operating Procedures and Operations Manual.
- 2.29. The operator also had a 'landing site register' of repeatedly used landing sites. The register contained such information as the site name, coordinates, description, hazards and relevant procedures, supported by photographs. The operator continued to build the register as time and resources permitted. At the time of the occurrence, the register had details for 28 landing sites. The Turners Bivouac site had yet to be recorded as it was one of the lesser-used sites.
- 2.30. Many of the operator's landing sites were located within the Fiordland National Park and were covered by concession¹³ agreements arranged with the Department of Conservation (DOC). The concessions stipulated which sites could be used for landing and how to approach the sites. Additionally, there could be restrictions on how often a site could be used, and on the purpose of the landing. For example, rock climbers, mountaineers, hunters and trappers could be approved but not tourist scenic landings. The landing site on Mt Madeline was subject to such a concession.
- 2.31. The operator used a combination of means to monitor the progress and safety of flights. Staff at each of the operator's bases managed a daily flight log that was populated with relevant information from either direct radio calls or satellite messaging when outside radio coverage. The automated Spidertracks position reports were also able to follow each flight.
- 2.32. For the occurrence flight, the daily flight log recorded the helicopter lifting from Lone Pine for Turners Bivouac at 1640, with two people on board and 35% fuel. The next

¹¹ See New Zealand Civil Aviation Rules (CARs), Part 1 Definitions and Abbreviations; also see Appendix 1

¹² Any structure or any area of land or water used for take-off or landing

¹³ A lease, licence, permit or easement granted under Section 2 of the Conservation Act 1987

radio call was to be by 1710.¹⁴ The next entry was at 1656 recorded as "MESSAGE – Hit the tail crashed, Everyone OK Helicopter bad".

- 2.33. The operator, as part of their safety programme, ran regular individual training exercises for its staff. In the month before this accident, the person who was running the Milford Sound base at the time of the accident was given a simulated emergency exercise based around an overdue helicopter.
- 2.34. Each of the operator's helicopters was equipped with additional survival equipment should it be stranded in a remote location with passengers.¹⁵

¹⁴ The operator permitted a maximum of 30 minutes between communications before initiating any uncertainty action.

¹⁵ The content could vary depending on the role and time of year, but would typically include cold-weather clothing, sleeping bag, food and water.

3 Analysis Tātaritanga

Introduction

- 3.1. The following section analyses the circumstances surrounding the accident to identify those factors that increased the likelihood of the event occurring or increased the severity of its outcome.

Accident sequence

- 3.2. Examination of the rocky landing area showed that a large flat rock on the edge of the elevated landing area had moved and had broken in two. The state of the earth where the rock had been and the condition of the two matching broken surfaces of the rock indicated that the break was recent (see Figure 4). There was also evidence of fresh scraping to the top surface of a boulder on the approach to the landing site and on a large boulder outcrop on the right side.
- 3.3. After coming to a hover over the general landing area, the pilot spent nearly 30 seconds (s) positioning the helicopter to land. The manoeuvring about and the time taken was a lot longer than would normally be expected and reflected a cautious approach taken by the pilot because of their lack of familiarity with the landing area. The intended landing position was as much as half a metre further out than where previous helicopters had landed.

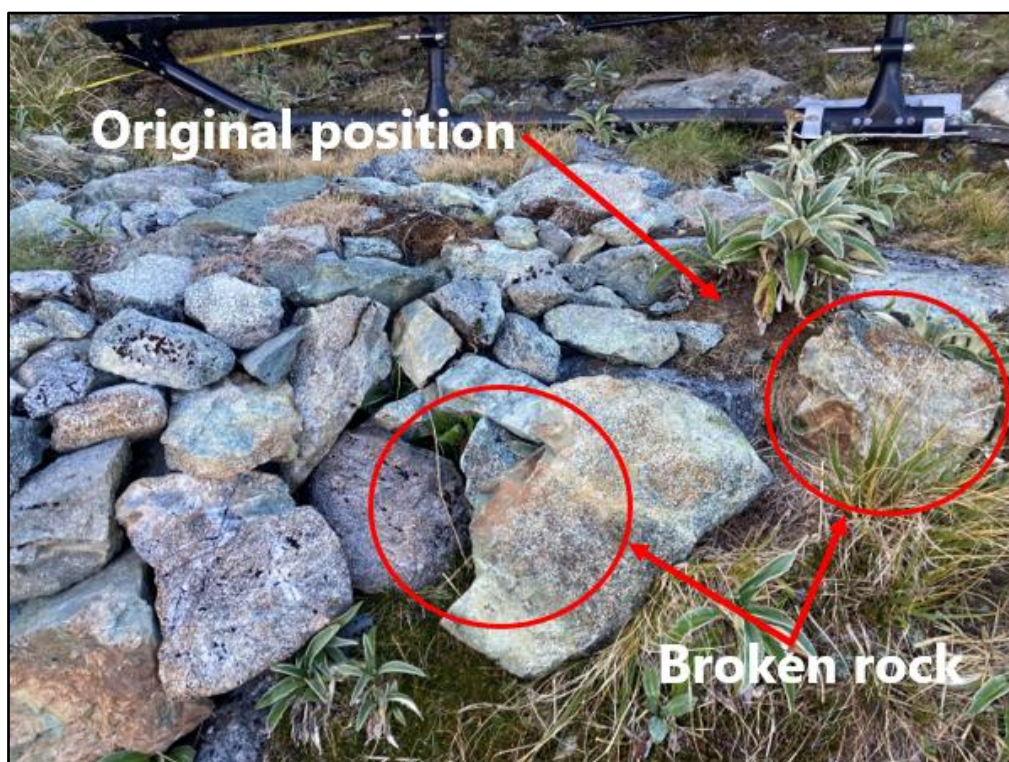


Figure 4: Front of landing site showing broken rock

- 3.4. As the helicopter started to settle on the rough ground it is **virtually certain** that a rock under the rear of the right skid broke, causing the tail of the helicopter to suddenly drop and move right. The cockpit video camera records the front of the

helicopter pitching up and turning left. This movement resulted in the tail rotor blades striking a boulder underneath it, causing a vibration that the pilot felt through the flight controls.

- 3.5. The pilot, concerned about possible damage to the helicopter, took what they considered to be the safest course of action by not trying to fly away, but rather committing fully to the landing and shutting down the engine. During this manoeuvring the main rotor struck the top of a large boulder outcrop on the right. This resulted in severe shaking caused by the unbalanced main rotor blades, and the helicopter rotated left through about 50° as it landed. Once the engine was shut down the shaking reduced then stopped.
- 3.6. The time between the tail rotor suddenly dropping and striking the rock and the main rotor striking the boulder outcrop was about 9 s (see Figure 5).
- 3.7. The damage to the tail rotor and tail boom, including the tail rotor drive and control, was significant. Had the pilot attempted to fly away after the tail rotor struck the boulder, it is **very likely** that the helicopter would have suffered an in-flight breakup.

Remote landings

- 3.8. The operator was approved for CTOs, with a predominant part of the business being scenic flights and adventure tourism involving landing on glaciers and in mountainous terrain. To manage the risks involved, the operator had a pilot competency programme and prescribed remote-landing procedures. The operator had assessed over 300 landing sites in the Fiordland and Southland regions to which they might operate.
- 3.9. Many of the prospective landing sites used by the operator were covered by DOC concessions, including the Mt Madeline site. The concessions determined the purpose of the landing and how often the operator could use a site, thereby potentially limiting training opportunities. The operator was therefore reliant on its pilots capturing the salient points of concession sites, so that a pilot on a subsequent flight to the site was more informed of its characteristics and requirements.
- 3.10. The chief executive for the operator said that the front of the landing pad at the site had been built up to give a level landing area. In their opinion the landing area was usable by the AS350 helicopter but, like any remote landing site, pilots needed to exercise extra caution because of potential obstacles. Also, like many other remote landing sites, if a pilot was not comfortable with the site, they could either land at another nearby location or not land at all.
- 3.11. The lead pilot had landed at Turners Bivouac the day before the accident to drop the climbers off, using a different but similar-sized helicopter. They said that they had landed at the site on six or seven previous occasions using the same AS350 model of helicopter. When the pilot was assigned to carry out the remote pick-up, they contacted the lead pilot to discuss the landing site and potential hazards. The plan was to retrieve the climbers from the same position where they had been dropped off.

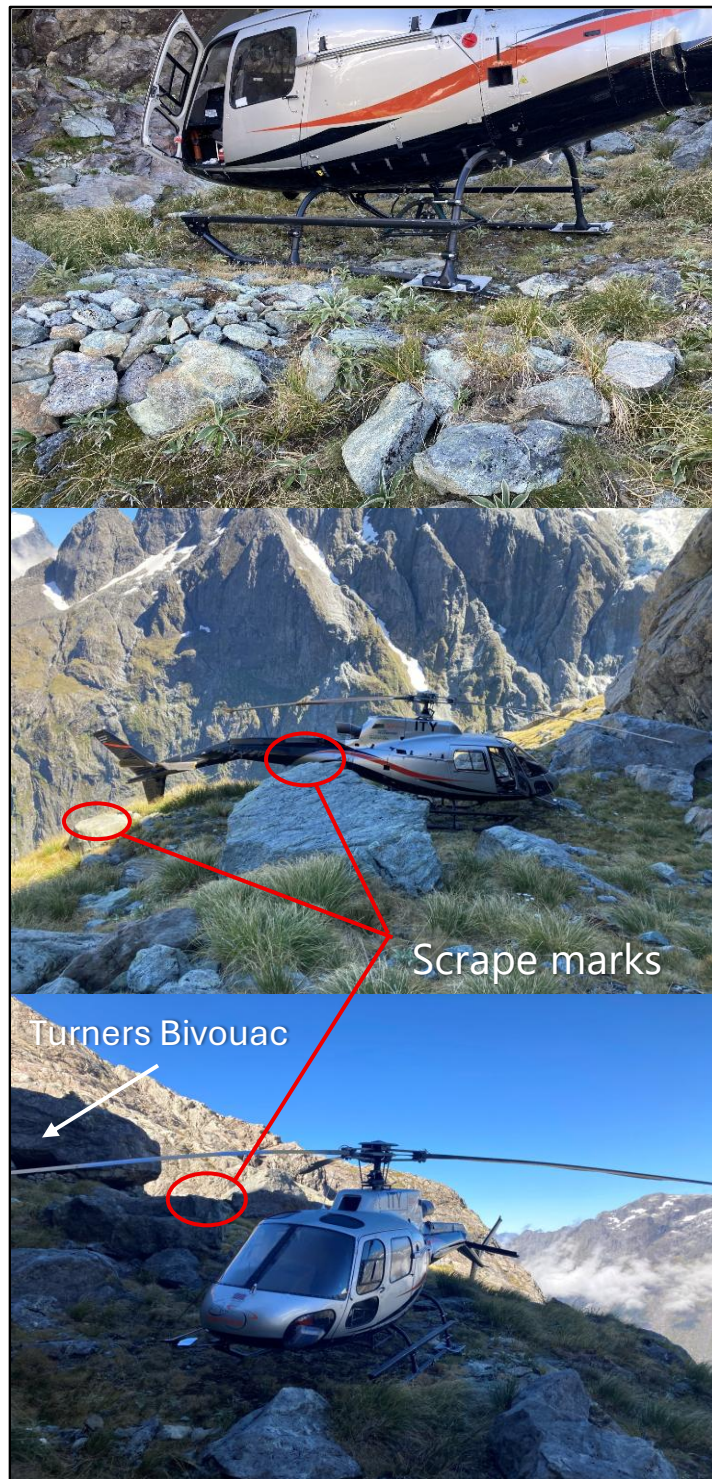


Figure 5: ZK-ITY in situ at Turners Bivouac

- 3.12. The pilot and lead pilot agreed it would be prudent to take another pilot as ground crew along on the flight. This would provide more flexibility on how the helicopter was positioned on the landing site, including touching down on a portion of the skids only. The pilot could remain at the helicopter controls while the ground crew loaded and secured the climbers. It also provided an opportunity for the second pilot to gain familiarity with the site.
- 3.13. The pilot commented that they had trained extensively to go to places that they had not been to before. They stated that after their discussion with the lead pilot they

considered that they had all the information that they needed for a safe and efficient operation.

Workload

- 3.14. The pilot was on day five of a five-day on two-day off roster pattern. They started duty at 1000. They conducted several scenic flights in the morning in another of the operator's helicopters and then another scenic flight immediately before the accident flight. They said that they were well rested and had eaten and hydrated during the day of the accident. The pilot who acted as ground crew for the flight was on day two of their five-day roster pattern, having started duty at 0900. They had completed two flights earlier in the day. They also said that they felt well rested on the day.
- 3.15. The investigation determined that neither health nor fatigue was a factor in this accident.

Flight following and passenger recovery

- 3.16. The operator used Spidertracks as the primary means of tracking their helicopter operation, with departure and arrival messages sent via Spidertracks and mobile phone as the backup. The pilot notified the flight coordinator¹⁶ of the accident via Spidertracks. The flight coordinator initiated the Emergency Action Plan, contacting RCCNZ (Rescue Coordination Centre New Zealand) and the operator's senior management.
- 3.17. The operator's emergency procedures helped ensure a recovery plan was quickly put into action, which resulted in all those involved in the accident being safely evacuated within 90 minutes. The quick response time highlights the importance of having procedures that are regularly reviewed and practised.

Post-occurrence actions

- 3.18. In accordance with regulatory requirements¹⁷ and internal procedures, the operator undertook an investigation and review into the accident. The operator advised the Commission that it had placed increased emphasis on updating and expanding its landing sites register of frequently used landing sites.
- 3.19. The operator had also reminded its pilots that when uplifting passengers from remote areas, they should select the best site available. This may be where passengers are waiting or possibly nearby. If the risk is still considered too high, the task should be cancelled completely.

¹⁶ The operator's Operations Manual Revision 15, p 42 defines the role of flight coordinator to include flight following, monitoring and recording, load manifest procedures, and instigation of overdue aircraft procedures when required.

¹⁷ The operator was required under Civil Aviation Rules, Part 12 Accidents, Incidents, and Statistics to undertake an investigation into the accident.

4 Findings

Ngā kitenga

- 4.1. The pilot was appropriately qualified, trained and capable of performing the task assigned.
- 4.2. The landing site had been built up over several years to try to provide a safer area to land.
- 4.3. The landing site, while usable, was restricted and challenging.
- 4.4. The operator and pilot were proactive in taking an additional crew member to assist with the loading of the two climbers.
- 4.5. In being cautious, the pilot attempted to land the helicopter further to the rear of the landing area than where other helicopters had previously landed.
- 4.6. As the helicopter started to settle on the rough ground it is **virtually certain** that a rock under the rear of the right skid broke, causing the helicopter's tail rotor to suddenly drop and strike a boulder located underneath it.
- 4.7. The pilot chose to reposition and land at the site, and in doing so **very likely** ensured the safety of those onboard, but this resulted in the main rotor striking a large boulder outcrop.
- 4.8. The operator's training and procedures, including its emergency response plan, ensured the climbers and crew were safely and quickly recovered following the accident

5 Safety issues and remedial action

Ngā take haumarū me ngā mahi whakatika

General

- 5.1. Safety issues are an output from the Commission's analysis. They may not always relate to factors directly contributing to the accident or incident. They typically describe a system problem that has the potential to adversely affect future transport safety.
- 5.2. Safety issues may be addressed by safety actions taken by a participant, otherwise the Commission may issue a recommendation to address the issue.
- 5.3. No safety issues were identified.

6 Recommendations Ngā tūtohutanga

General

- 6.1. The Commission issues recommendations to address safety issues found in its investigations. Recommendations may be addressed to organisations or people and can relate to safety issues found within an organisation or within the wider transport system that have the potential to contribute to future transport accidents and incidents.
- 6.2. In the interests of transport safety, it is important that recommendations are implemented without delay to help prevent similar accidents or incidents occurring in the future.
- 6.3. No recommendations were issued.

7 Other safety lessons

Ngā akoranga matua

- 7.1. When accepting and undertaking a task, operators and pilots need to ensure safety is not compromised for remote landing sites. If there is any doubt, then an alternative plan of action should be considered, which may include landing nearby or not accepting the task.
- 7.2. This accident highlights the benefit of having effective flight-following communications and an appropriate emergency action plan that is regularly reviewed and practiced by all staff as appropriate.

8 Data summary

Whakarāpopoto raraunga

Aircraft particulars

Aircraft registration:	ZK-ITY
Type and serial number:	Airbus Helicopters AS350 B3; 4949
Number and type of engines:	one; Safran Arriel 2B1 turboshaft
Year of manufacture:	2010
Operator:	Te Anau Helicopter Services Limited
Type of flight:	Commercial charter
Persons on board:	two

Crew particulars

Pilot's licence:	Commercial Pilot Licence (Helicopter)
Pilot's age:	47
Pilot's total flying experience:	5300 hours

Date and time 12 January 2025, 1654

Location Turners Bivouac, Mt Madeline
latitude: 44° 37' 10
longitude: 168° 01' 16

Injuries nil

Damage extensive

9 Conduct of the inquiry

Te whakahaere i te pakirehua

- 9.1. At 0900 on 13 January 2025 the CAA notified the Commission of the accident. The Commission subsequently opened an inquiry under section 13(1) of the Transport Accident Investigation Commission Act 1990 and appointed an Investigator-in-Charge.
- 9.2. Two Commission investigators travelled to Te Anau, arriving in the evening following the accident. They were unable to access the accident site until 16 January 2025 because of persistent cloud in the area. During this time the investigators interviewed the crew, the operator, staff and other witnesses, and obtained relevant operator, personnel and helicopter documentation.
- 9.3. On 15 January 2025 the Bureau d'Enquêtes et d'Analyses (BEA) appointed an accredited representative to assist in the inquiry. Additionally, the BEA nominated technical advisors from Airbus Helicopters (aircraft manufacturer), Safran Helicopter Engines (engine manufacturer) and European Union Aviation Safety Agency (type certificate regulator).
- 9.4. On the morning of 16 January 2025, the Commission investigators visited the site and recorded relevant information. The helicopter was removed from the site that evening and taken to an engineering facility for further damage assessment. Additional information was obtained thereafter, including interviews with the two climbers.
- 9.5. On 31 July 2025 the Commission approved a draft report for circulation to five interested parties for their comment. All five interested parties advised they had no comment to make on the draft report.
- 9.6. On 24 September 2025 the Commission approved the final report for publication.

Abbreviations

Whakapotonga

BEA	Bureau d'Enquêtes et d'Analyses
CTO	commercial transport operations
CARs	New Zealand Civil Aviation Rules
DOC	Department of Conservation
ft	foot
GPS	global positioning system
kg	kilogram
m	metre
s	second

Glossary

Kuputaka

Basic weight	Weight of the airframe and engines, fixed equipment and full oil tanks but not including fuel, passengers or baggage and cargo
DOC Concession	A lease, licence, permit or easement granted under Section 2 of the Conservation Act 1987
Remote aerodrome	Any structure or any area of land or water used for take-off or landing
Spidertracks	Tracking and communication system, by Spider Tracks Limited, installed on aircraft to provide real-time global positioning system (GPS) tracking and text-based communication via satellite between aircraft and operator
Torsional damage	Twisting of the shaft caused by applied force

Appendix 1 Relevant Civil Aviation Rules definitions

New Zealand Civil Aviation Rules (CARs), Part 1 Definitions and Abbreviations

Commercial transport operation means an operation for the carriage of passengers or goods by air for hire or reward—

(1) where—

(i) each passenger is performing, or undergoing training to perform, a task or duty on the operation; or

(ii) the passengers or goods are carried to or from a remote aerodrome—

(2) except those operations in paragraph (1) that are—

(i) a helicopter external load operation conducted under Part 133; or

(ii) an agricultural aircraft operation conducted under Part 137.

Remote aerodrome means any structure or any area of land or water used for take-off or landing—

(1) to which access by road or water is restricted, limited or obstructed by geographical conditions; and

(2) that does not meet standards for aerodromes that are acceptable to the Director under Part 139.

Kōwhaiwhai - Māori scroll designs

TAIC commissioned its four kōwhaiwhai, Māori scroll designs, from artist Sandy Rodgers (Ngāti Raukawa, Tūwharetoa, MacDougal). Sandy began from thinking of the Commission as a vehicle or vessel for seeking knowledge to understand transport accident tragedies and how to avoid them. A 'waka whai mārama' (i te ara haumarū) is 'a vessel/vehicle in pursuit of understanding'. Waka is a metaphor for the Commission. Mārama (from 'te ao mārama' – the world of light) is for the separation of Rangitāne (Sky Father) and Papatūānuku (Earth Mother) by their son Tāne Māhuta (god of man, forests and everything dwelling within), which brought light and thus awareness to the world. 'Te ara' is 'the path' and 'haumarū' is 'safe' or 'risk free'.

Corporate: Te Ara Haumarū - the safe and risk free path



The eye motif looks to the future, watching the path for obstructions. The encased double koru is the mother and child, symbolising protection, safety and guidance. The triple koru represents the three kete of knowledge that Tāne Māhuta collected from the highest of the heavens to pass their wisdom to humanity. The continual wave is the perpetual line of influence. The succession of humps represents the individual inquiries.

Sandy acknowledges Tāne Māhuta in the creation of this Kōwhaiwhai.

Aviation: Ngā hau e whā - the four winds



To Sandy, 'Ngā hau e whā' (the four winds), commonly used in Te Reo Māori to refer to people coming together from across Aotearoa, was also redolent of the aviation environment. The design represents the sky, cloud, and wind. There is a manu (bird) form representing the aircraft that move through Aotearoa's 'long white cloud'. The letter 'A' is present, standing for a 'Aviation'.

Sandy acknowledges Ranginui (Sky father) and Tāwhirimātea (God of wind) in the creation of this Kōwhaiwhai.

Maritime: Ara wai - waterways



The sections of waves flowing across the design represent the many different 'ara wai' (waterways) that ships sail across. The 'V' shape is a ship's prow and its wake. The letter 'M' is present, standing for 'Maritime'.

Sandy acknowledges Tangaroa (God of the sea) in the creation of this Kōwhaiwhai.

Rail: rerewhenua - flowing across the land



The design represents the fluid movement of trains across Aotearoa. 'Rere' is to flow or fly. 'Whenua' is the land. The koru forms represent the earth, land and flora that trains pass over and through. The letter 'R' is present, standing for 'Rail'.

Sandy acknowledges Papatūānuku (Earth Mother) and Tāne Mahuta (God of man and forests and everything that dwells within) in the creation of this Kōwhaiwhai.



Transport Accident Investigation Commission

Recent Aviation Occurrence reports published by the Transport Accident Investigation Commission (most recent at top of list)

AO-2024-003	Airbus A320-232, ZK-OXJ and drone, Air proximity incident over South Auckland, 7 NM east of Auckland International Airport, 02 April 2024
AO-2023-003	Runway excursion (veer-off), Boeing 777-319ER ZK-OKN, Auckland International Airport, 27 January 2023
AO-2023-011	ZK-JED BE76 / ZK-WFS C172, near mid-air collision, Ardmore Aerodrome, 3 October 2023
AO-2023-010	Kawasaki BK117 B-2, ZK-HHJ, collision with terrain, Mount Pirongia, 19 September 2023
AO-2022-005	Boeing 737-484SF, ZK-TLL, Incorrect fuel configuration, Sydney to Auckland, 7 June 2022
AO-2023-001	Airbus Helicopters AS350B2 (ZK-IDB) and EC130B4 (ZK-IUP), reported close air proximity, Queenstown Aerodrome, 27 December 2022
AO-2018-009	MD Helicopters 500D, ZK-HOJ, In-flight breakup, near Wānaka Aerodrome, 18 October 2018
AO-2022-002	Robinson R22, ZK-HEQ, loss of control inflight, Karamea, West Coast, 2 January 2022
AO-2021-003	Airbus Helicopters AS350 B3e, ZK-ITD, loss of control in flight, Lammerlaw Range, 40 km northwest of Dunedin Aerodrome, 16 September 2021
AO-2020-002	Glider, Schleicher ASK21, ZK-GTG, Impact with Terrain, Mount Tauhara, Taupō, 31 May 2020
AO-2022-001	Ultramagic Balloons, N-250, ZK-MET, pilot ejection from basket on landing, Lyndhurst, near Methven, 1 January 2022

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