Air New Zealand DC-10 crash into Mt Erebus and how it has affected Antarctic Tourism

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What is Tourism?

The definition of what a tourist in Antarctica is is itself debated. Generally in Polar Tourism three types of visitor flows are recognised: 1) domestic tourism 2) inbound tourism 3) outbound tourism (Hall, 2009) (UN & UNWTO, 2007). In relation to inbound and outbound tourism the World Tourism Organization (WTO) has recommended that an international tourist be defined as: “a visitor who travels to a country other than that in which he/she has his/her usual residence for at least one night but not more than one year, and whose main purpose of visit is other than the exercise of an activity remunerated from within the country visited” (WTO, 1991) and that international excursionists (e.g. cruise-ship visitors), who are significant in the polar context, be defined as “[a] visitor residing in a country who travels the same day to a country other than which he/she has his/her usual environment for less than 24 hours without spending the night in the country visited and whose main purpose of visit is other than the exercise of an activity remunerated from within the country visited” (WTO, 1991).

The New Zealand Antarctic Society defines tourism as (a) Commercial activities of governments and private companies, such as aircraft overflights, aircraft landings, ship cruises and small craft voyages; (b) Non-commercial activities such as goodwill and VIP visits, recreational activities of scientists and support staff; and (c) Privately-sponsored expeditions (e.g. Footsteps of Scott, etc.) (New Zealand Antarctic Society, 1993)
History of Tourism in Antarctica

The modern era of Antarctic tourism started out very modestly in the late 1950s and early 1960s with the Argentinean vessel 'Les Eclaireurs' taking 100 tourists on two journey's down to the South Shetland Islands and the west coast of the Antarctic Peninsula. (Headland, 1994) Tourism in Antarctica has been around since 1957. In the first 35 years around 45,000 tourists landed on Antarctica. (Enzenbacher, 1993)

Since tourism first started in Antarctica it has always been increasingly popular as more and more people want to experience the most remote place on earth. The total number of tourists who have visited Antarctica is difficult to determine with certainty, due to lack of uniformity in reporting procedures. (Enzenbacher, 1993) Scheduled commercial cruises or flights are normally reported to home governments by respective tour operators, and data are later exchanged under the information provision of the Antarctic Treaty. Precise numbers of visits made by small or non-commercial expeditions to Antarctica are more difficult to obtain: many visits may never be reported. (Enzenbacher, 1993)

In 1966 the pioneering operator Lars-Erik Lindblad began offering regular trips to the Antarctic (Reich, 1980) and after a few years commissioned the building of the M/S 'Lindblald Explorer'. After that expedition cruises to the Antarctic Peninsula became an annual feature. (Ligget, 2010)

Overflights of Antarctica became popular during the 1970s, bringing plane-loads of tourists who never set foot on the continent. From February 1977 to December 1980, Qantas and Air New Zealand made 44 such flights carrying more than 11,000 passengers. After the crash of an Air New Zealand DC10 on Mt Erebus (Ross Island) on 28 November 1979, with no survivors among the 257 passengers and crew, tourist overflights became less popular. The last Qantas flight over Antarctica was made on 16 February 1980. (Enzenbacher, 1993)
Antarctic Treaty Recommendations on Tourism

The Antarctic Treaty System provides a forum in which to develop strategies to protect Antarctica from effects of tourist activity. (Enzenbacher, 1993)

The Antarctic Treaty System sets out some recommendations for tourists in Antarctica.

1) Government where expedition being organised must send notice of expedition ASAP to other governments whose bases they intend to visit. As well terms for permission to visit. (Antarctica New Zealand, 1987)

2) Governments “exert appropriate efforts” to ensure all tourists stay within Treaty regulations. Inform organisers of expeditions for visiting stations, compliance with Treaty and SPA’s. Advance notice given to all Consultative Parties (CP’s). (Antarctica New Zealand, 1987)

3) Keep under review effects of tourists. Use best efforts to ensure provisions of Treaty are applied to all visitors not sponsored by CP’s. (Antarctica New Zealand, 1987)

4) Use best endeavours to ensure all tourists aware of Statement of Accepted Practices and provisions of Treaty. Tourists only visit stations where permission granted and land only in areas of special tourist interest (never defined). CP’s require tour organisers to report their activities at end of season. CP’s will transmit such reports. (Antarctica New Zealand, 1987)

5) Statement of Accepted Practices, Primarily Conservative and Treaty Recommendations. Urge non-government expeditions to carry adequate insurance. Encourage commercial tour operations to tour guides. Notify commercial aircraft operators that present level (1979) of tourist overflight activity: exceeds existing capabilities, may interfere with normal operations flights, exceeds capacity of Antarctic operations to respond to emergencies. (Antarctica New Zealand, 1987)
Air New Zealand and The DC10 crash into Mt Erebus

Air New Zealand, founded in 1940 as Tasman Empire Airways Limited, is New Zealand’s national airline. (Air new Zealand) The airline flies to, from and within New Zealand, directly serving 53 cities in 16 countries, including 26 destinations within New Zealand. (Air new Zealand) Air New Zealand is a member of the Star Alliance global airline alliance, having joined in March 1999. (Air New Zealand, 2006)

On the 15th of February 1977 Air New Zealand operated its first day-trip to Antarctica. The DC10 flight was commanded by Captain Ian Gemmell, with 235 passengers on board. However on the 28th of November in 1979 tragedy struck for Air New Zealand’s Antarctica overflights when DC10, ZK-NZP, crashed on Mount Erebus in Antarctica while on a sightseeing flight. All 257 people on board died, including 24 crew and staff. (Air New Zealand, 2006)

Several books and articles have been written about the accident, the investigation that followed and the effects it has had on New Zealand and Antarctic Tourism.

Gordon Vette with John Macdonald writes in Impact Erebus “On November 28 1979, an Air new Zealand DC10 airliner crashed into the northern flanks of Mt Erebus while on a scenic flight over Antarctica. All 257 people aboard died instantly. Nine hours later a searching US Navy aircraft sighted the wreckage: ‘a brown smear’ dwarfed in the immensity of the mountain. It would have been appalling disaster for any country, but in New Zealand with a population of just three million, the horror was doubly felt. Almost everybody knew or had some association with somebody among the victims. Most were nationals, but there were also 24 Japanese aboard, 10 Americans, two Britons and an Australian.” (Vette, 1983)

In Verdict Erebus the unfolding events are recorded as followed. “A DC10 aircraft, operated by Air New Zealand and officially recorded as ZK-NZP, was on its way from Auckland to Antarctica. It had left Auckland Airport at 8.17 a.m., carrying 237 passengers on a scenic flight planned to fly over the McMurdo Sound area in Antarctica and then return to New Zealand, landing at Christchurch. The round trip
would be about 5,000 miles and would occupy about eleven hours. The aircraft carried a crew of twenty, so there were 257 people on board. These scenic flights to Antarctica had been going since February 1977, but there had not been many of them. This was the fourteenth flight, Flight TE901." (Mahon, 1984)

The resulting search for the aircraft and survivors took a long time, effort and money. When Air New Zealand DC-10 flight crashed on Mount Erebus in 1978, 20 hours of C-130 and many hours of helicopter time were diverted from the scientific program to search the disaster, to say nothing of the scientific personnel whose work was interrupted while they assisted. These costs of search and rescue have never been fully identified. (White, 1994)

At 1am 29th November 1979 New Zealand time the fate of the missing DC-10 was revealed. A U.S. Navy Hercules aircraft, which had been systematically searching the McMurdo area, had seen wreckage on the northern slopes of Mount Erebus, and on close observation it became clear that this was the wreckage of the missing airliner. The crew of the Hercules were astounded at the sight below them. Here was the white snow-covered rising ground of the mountain with the wreckage looking like nothing more than a long black smear extending hundreds of yards up the ice slope. Some large pieces of wreckage could be seen near the top of the disaster track but, from the sir, it was difficult to see anything Else of substantial size. (Mahon, 1984)

There seemed to be no survivors.

Francisco J. Erize made the following comments on Antarctic Tourist Overflights. “In 1977 the first of a series of "day trips" to the Antarctic was made in an aircraft chartered from the Australian airline Qantas. This proved popular, and between 1977 and 1980 Qantas and Air New Zealand made a number of flights over Antarctica. Passenger numbers were up to 300 a flight and, with one sad exception, these flights caused no direct impact on the Antarctic ecosystem. The exception was an Air New Zealand flight in November 1979, which crashed into the side of Mount Erebus, killing all 257 people on board. Besides the appalling loss of life, the subsequent search and rescue operation disrupted much of the American and New Zealand
scientific program operated from Ross Island. Antarctic overflights have since been discontinued." (Erize, 1986)

Many years later Air New Zealand acknowledged its part it played in the accident and apologised to the Families. A new stainless steel cross was placed near the crash site in memory of those that had lost their lives. This replaced the original wooden cross (Ministry for Culture and Heritage, 2011) that is on the front page of this review, as it had started deteriorating in the extreme conditions down there. Below is a picture of the new cross on Mt Erebus.

**Picture 1:** The new cross and koru placed on Mt Erebus near the accident site in memory of those that lost their lives. (Ministry for Culture and Heritage), updated 19-Aug-2010, 2010)
Investigation and Consequences

After the failed rescue mission several investigations were launched and different conclusions were found throughout the years that followed.

Gordon Vette writes “There followed the gargantuan job of accident investigation, led by New Zealand’s Chief Inspector of Air Accidents, Ron Chippindale. Chippindale reported to the public on 30 May 1980, the Captain Jim Collins had erred by continuing the flight at low level toward an area of poor surface and horizon definition when the crew was not certain of their position. First Office Greg Cassin was criticised for failing to adequately monitor the flight because he was engrossed in trying to establish radio contact with McMurdo. The airline received virtually no criticism, barring mild censure for lapses in the briefing it gave the crew. Polar whiteout was touched on in one sentence – as a possible cause of deception in the final moments of the aircraft’s life.” (Vette, 1983)

Chippindale found no evidence to suggest that the crew had been misled by the error in the flight plan shown to them at the briefing. He also stated that the US Navy Air Traffic Control Centre at McMurdo had contacted the DC-10 but had not located it on its radar. The Chippindale report contained some criticism of Air New Zealand, such as remarks on the inadequacy of the route briefing, and of the Civil Aviation Division (CAD). One example was a question of appropriate life-sustaining equipment in an area where search and rescue would be especially difficult. But the probable cause was clearly stated to have been pilot error. (Auburn, 1983)

Peter Mahon was appointed by the New Zealand government as the ‘one man’ (Mahon, 1984) Commission of Inquiry to ascertain the true causes of this massive air disaster. (Mahon, 1984) After all the evidence that was found, and there wasn’t much, here are the conclusions that Mahon could draw. "By a navigational error for which the aircrew was not responsible, and about which they were uniformed, an aircraft had flown not into McMurdo Sound but into Lewis Bay, and there the elements of nature had so combined at a fatal coincidence of time and place, to
translate an administrative blunder in Auckland into an awesome disaster in Antarctica.” (Mahon, 1984)

Quite Apart from the main findings, the Commission’s report castigated the conduct of both Air New Zealand and the CAD. Commenting on the stance of the airline, the judge (Mahon) held sections of deception which was part of an attempt to conceal a series of disastrous administrative blunders – ‘an orchestrated litany of lies’. (Auburn, 1983)

Soon after, New Zealand lawyers representing the estates of 116 victims filed claims of US$78 million; five additional claims were filed in Los Angeles courts. Dependents of the ill-fated crew filed claims for US$1 million each against the US Navy on the grounds that radar operators did not warn the pilot that they were headed into the mountain. The accident was first attributed to pilot error, but later it was found that the Air New Zealand computers directed the flight straight into the mountain. (White, 1994)

After the crash of an Air New Zealand DC10 on Mt Erebus (Ross Island) on 28 November 1979, with no survivors among the 257 passengers and crew, tourist overflights became less popular. The last Qantas flight over Antarctica was made on 16 February 1980. (Enzenbacher, 1993)
Modern Day Antarctic Tourism

With the signing of the Madrid Protocol in 1991 and the associated demise of mining as a major Antarctic issue, commercial tourism has emerged as the last major commercial activity taking place in the Antarctic Treaty area. The Treaty parties have discussed Antarctic tourism on a number of occasions without, however, reaching agreement on how tourism should be managed. (Baurer, 1993)

Francisco J. Erize wrote the following in 1986 regarding Antarctic tourism. "Tourism is well established in the Antarctic. Its impact is at present limited; the number of tourists is small and unlikely to increase much in the near future. Most tourists come by sea. There are two types of cruise: natural history cruises, mostly in small vessels, and more traditional entertainment cruises in larger passenger ships. Small numbers of private expeditions, mostly in yachts, visit the Antarctic. Official guests of the direction or management of research stations may arrive by supply ship or by air. Some tours arrive by plane and stay only a short while." (Erize, 1986)

After an almost 15-year long hiatus, Qantas resumed overflights of East-Antarctica in 1994/1995. Although the number of tourists experiencing a snapshot of Antarctica, on overflight itineraries, appears to have gradually declined over the last few years. (Liggett, 2010) Overflights are not the only type of airborne tourism in Antarctica.

Erize also foresaw some possible trends and complications that come with tourism in Antarctica. "Tourism is unlikely to increase much in the near future because of its high cost, the risk of passenger dissatisfaction on account of bad weather, and the difficult financial situation of some countries. Impacts arising from tourist activities are discussed. At research stations, the impact is on the life and work at the station, but in the field there may be considerable impact on wildlife. The best answer lies in control and interpretation, particularly through tour guides. A possible problem arises with ships' crews, who may not have been as carefully briefed as the passengers. Tourism generates in visitors a lasting interest in the Antarctic, which strengthens public opinion towards conservation." (Erize, 1986)
Although the effect of the Air New Zealand DC-10 can’t be known for all types of tourism in Antarctica. The following graph (Figure 1) does clearly show that the accident does show an abrupt stop in Overflights in 1980 and that in the mid 1990’s some flights restarted.

![Graph showing tourist numbers](image)

**Figure 1.** Estimated numbers of Antarctic tourists. (A figure that was made available by Daniela Liggett (2011) and that is based on IAATO (2001) records) (Liggett, 2010)

As you can see on the above graph the preferred way to travel to Antarctica or the Sub-Antarctic Islands as a tourist is via expedition cruises. Although these can be pricey many people are happy to pay the price in order to experience the amazingness of Antarctica. There has also been an increase in those travelling to Antarctica for a thrill and adventure trips but these are only for a certain type of person and it has a raft of issues that comes with this type of travel.
Conclusion

Tourism can take place in many different forms. In the context of Antarctica it is usually in the form of sea travel, cruises some land some just look, land based with air support or just air based. Since 1957 commercial tourism has been taking place in Antarctica. However since this time there has also been much debate as to what a tourist is and its effect on the Antarctic ecosystem and how tourism should be managed.

In 1977 the national airline of New Zealand started to conduct overflights. This was where a plane full of tourists left New Zealand and flew down to Antarctica but never landed down there. The overflights flew over Antarctica for several hours and gave the chance for the tourists to view Antarctica from above. These proved very popular until the 26th November 1979. This was when an Air New Zealand DC-10 crashed into the slopes of Mt Erebus instantly killing all 257 people on board. What followed was an extensive effort to locate the crash site and to recover what could be recovered. Then several investigations into what happened and what caused it accident, with varying conclusions.

What is known is that Flight TE 901 would be the last tourist overflight that Air New Zealand did and that Qantas soon followed suit in early 1980. However Qantas did re-start a few overflights again 15 years later. What is not known as clearly is how this accident affected other forms of tourism in Antarctica. We can draw the conclusions that without the choice of participating in overflights, sea cruises have become a hugely popular to visit Antarctica. Thousands of people a year take part in cruises, what would be interesting to know is how popular these would if the Air New Zealand DC-10 never crashed into Mt Erebus and there was still the option of these overflights, would more people get to experience Antarctica that can’t currently because of the high costs with the other forms of tourism.
Works Cited


