

Come fly with me over the Antarctic

EACH SUMMER UP TO AROUND ten tourists flights (using Boeing 747-400 aircraft chartered from Qantas by Croyden Travel) depart from Sydney, Melbourne, or Adelaide, and sometimes Perth, with the aim of seeing the magnificent views which the Antarctic has to offer. Figure 1 shows a flight path for such a sortie: the aircraft leaves Sydney at about 8 am DST (2100 UTC), reaches 50° S at about 10 a.m. (2300 UTC), and the Cape Adare area at around 12.20 p.m. (0140 UTC). The route shown on this example sees the plane then fly westwards along the coast to depart the Antarctic Continent over Dumont d'Urville at around 3 p.m. (0400 UTC).

The actual route depends on the viewing conditions: on another day the flight might firstly fly over the Dumont d'Urville area then head towards the Transantarctic Mountains which are a very popular target (*above*).

The success of these flights depends critically on the viewing conditions, in other words on the presence or otherwise of cloud. The Bureau of Meteorology plays a vital role in providing the flight pilot with information and forecasts which enable him or her to over-fly the least cloudy viewing regions. The forecast information is provided by the Australian Bureau of Meteorology Regional Forecasting Centre in Hobart, Tasmania, Australia or by Antarctic Meteorological Centre at Casey (when staffed). Typically an experienced Antarctic weather forecaster will be assigned to a particular flight. On a Friday evening they will prepare a preliminary outlook for the flight which will take place the following Sunday. This outlook will be in general terms giving a general idea of where the best viewing conditions might be. Overnight Saturday night-Sunday morning this forecaster will be back on-deck producing detailed forecasts of route-winds, weather, and, in particular, cloud conditions.

The relevant forecast products are generally compiled using the best Numerical Weather Prediction (NWP) computer models available globally and are complemented by satellite imagery obtained from the polar orbiting and geostationary meteorological satellites. In keeping with state-of-the art communications Qantas

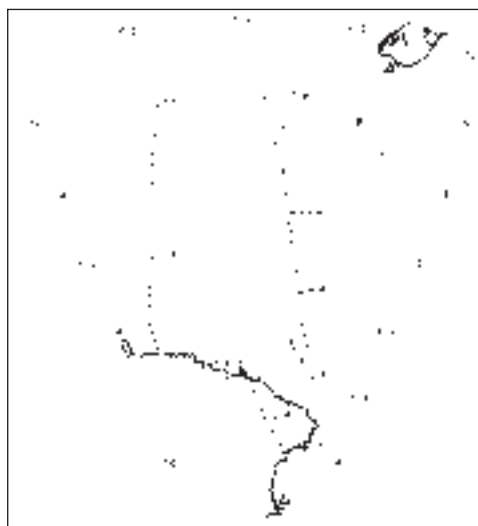


The Transantarctic Mountains as seen from a recent Qantas Boeing 747-400 tourist flight. The Ross Sea (covered in sea ice) is visible on the right hand side of the photo adjacent to the second engine cowling.

MIKE BALL

Operations are able to download the forecasts from their web site: this usually happens a few hours prior to the estimated flight departure time. Communications and the Bureau of Meteorology next play a vital role as the aircraft is approaching the Antarctic Coast: the pilot rings the Bureau for any updates in the information, and is usually able to fine-tune the flight path to maximise the viewing time of Antarctic features. Generally a splendid time is had by all and most flights provide wonderful visual experiences for the passengers, even hard-bitten Antarctic expeditioners who have seen it all before.

*Steve Pendlebury, Neil Adams, and Mike Ball,
Bureau of Meteorology*



Route sector map for Antarctic tourist flight taken on 22-23 February 2000. (Times are UTC).

Antarctic weather records: Mawson station

EACH ISSUE WE WILL WE BRING YOU HIGHLIGHTS OF the recent weather experienced at Australia's Antarctic stations. We thought that we'd start with Mawson station being, as it were, the western outpost, and the continental station (excluding the Antarctic Peninsula) with the longest continuous meteorological record. Next issue we'll move to Davis station.

Extremes for the year 2000

Highest Air Pressure	1015.4 hPa, 1st September
Lowest Air Pressure	953.1 hPa, 12th October
Highest Minimum Temperature	-00.6°C, 22 December
Lowest Minimum Temperature	-28.3°C, 18th May
Lowest Maximum Temperature	-22.5°C, 15th May
Highest Maximum Temperature	03.8°C, 30th December
Highest Maximum wind gust	SE @ 108 knots (200kph) at 02:08, 24th May

Weather phenomena

Mawson is a dry but windy place as can be seen from the wind and snow data for 2000. There were 98 continuous days of strong wind (ie 22 knots or greater) between January 30th and April 5th 2000. The record is 101 days between 21st May and 29th August in 1967.

	No. of Days	% of the year
Strong Wind (= >22 knots)	340	93
Gales (= >34 knots)	196	54
Blizzard	32	9
Snow fall	49	13
Blowing snow (=< 1km)	58	16

A blizzard is defined as a period of > one hour when the visibility is reduced below 100 m by blowing snow, the temperature is < 0°C and the wind speed is > 33 kts.



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WAYNE PAPPS

Records created in 2000

The following are the month by month extremes observed in 2000 which have been unmatched since February 1954 when records began. The values in brackets are the previous record value. In most of the months not mentioned there were values of one or more parameters which equalled a previous record.

January

Lowest 9am average Station Level Pressure: 978.9 hPa (982.1 hPa in '91)
 Lowest 3pm average Station Level Pressure: 979.5 hPa (982.8 hPa in '71 & '91)
 Most blizzard days for the month: 3 days (2 in '59, '62, '86, & '97)

February

Most strong wind days (note: 2000 is a leap year): 29 (28 in '56, '66, '71, '76, '86, & '91)

March

Windiest March, average wind-speed: 54.2 kph (51.2 kph in '96)

April

Windiest April, average wind-speed: 56.9 kph (55.1 kph '91)

May

Days of blizzard for the month: 7 (6 days in '69 & '99)

June

Days of blizzard most per month for the year: 23 (19 days in '68)

October

Most hours of sunshine for an October: 380.2 hrs. (310 hrs in '84)
 Lowest maximum temperature for an October: -8.1°C (Minus 7.5 in '91)

*Steve Pendlebury, Bureau of Meteorology, Hobart
 Data contributed by Max Walsh, Senior Observer
 at Mawson for 2000.*