

Going to Antarctica is a privilege afforded to few and it is impossible to visit without being profoundly moved by it. As a way of increasing the understanding within federal parliament of issues affecting the Antarctic, Sharman Stone, the Parliamentary Secretary to the Environment Minister, recently invited federal parliamentarians to participate in a re-supply voyage to Antarctica. WA Senator Peter Cook agreed to take the long

journey south, following in the footsteps of the explorers and scientists who have braved the rough seas of the Southern Ocean for the 10 days it takes just to reach the Antarctic. In this account of that voyage, Senator Cook explains why the pristine beauty of the Antarctic, and the valuable work that is being done in that harsh environment, is something all Australians should know more about.



# Footprints in ANTARCTICA

There is more than three times the snow and ice in Australia and its territories than in the whole of Alaska.”

I was on the bridge of MV Polar Bird, a Norwegian flagged Antarctic supply vessel, crunching its way through dense pack ice towards Casey, one of Australia’s three main Antarctic bases. Kim Pitt, a former Navy Commodore who spent time at WA’s Garden Island Naval Base, and now Chief of Operations for the Australian Antarctic Division went on: “It is a pity that maps of Australia don’t show the continent and all Australian territories. If they did, people would be surprised. Antarctica is huge—14 million square kilometres—and the Australian territory covers 43% of it.”

The Polar Bird at last breaks free of the pack ice and makes a cautious 5 knots across a flat-calm, ink-black sea. The sky is dark and forbidding. In this grey weather the Antarctic continent, which now frames the horizon, stands out as a brilliant white, thinly-drawn line. “Casey dead ahead,” a voice on the bridge intones. We strain through our binoculars to pick out the bright primary colours of the base’s buildings amidst the black and white monochrome of the shoreline.

“Antarctica is one reason why Australia is a leading science nation,” Pitt goes on. “The heroic age of Antarctica is over but that doesn’t stop people still associating it with images of Amundsen, Scott, Shackleton and Mawson.” They were larger than life, genuine Boys Own Annual heroes. Douglas Mawson is an authentic Antarctic icon—he deserves to have his face on Australia’s \$100 note. But today we have heroes too. They are a different sort of hero, largely unsung. They are more likely to be wearing white lab coats than polar fleece, more at home with laser beams and the density of particles in the upper atmosphere than huskies and dog sleds.

I am on voyage 3 of the Australian Antarctic Division’s 2002–03 summer program. As we drop anchor in Newcombe Bay off-shore from Casey, the base is readying for a round-the-clock re-supplying operation and personnel changeover. Nineteen people who have spent the winter in the scything winds and bitter cold of Antarctica will return to Hobart with us, and a new team we sailed down with will take up residence for the next 12 months. Over the next six days the Polar Bird unloads over 650,000 litres of fuel and all the food and equipment supplies for the next year.

The outgoing base leader is John Rich, a lanky, Canadian-born Australian from Albany. After a year away he is looking forward to seeing his wife and daughters again. “Some guys go back and just sit in

the botanical gardens for a day. They need to see trees and green grass again. A year in the snow does that to you. Me? I’m just looking forward to the smell of gum trees and seeing the hills around Albany again,” he says. John Rich was obviously a great base leader. At the handover ceremony as we were leaving, all those who had spent the previous winter with him gave John a warm and emotional sendoff.

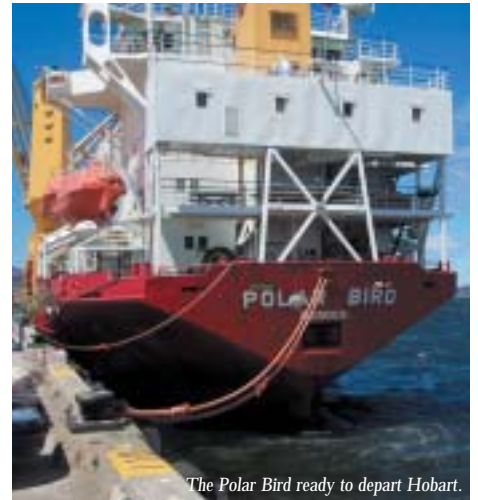
Bruce Alden and Cliff Spencer are going ashore to spend the winter. Bruce is a Bureau of Meteorology Officer from Geraldton and Cliff, who will be in charge of Ops for the next year, is from Esperance. To prepare themselves for the rigours of their new posting, they have undergone eight weeks of arduous field training, learning survival skills in the rugged interior of Tasmania. Casey is prone to sudden blizzards and fierce katabatic winds that can leave a person stranded in a complete white-out, and freezing cold. The Base Handbook says of the weather: “within minutes, visibility can be reduced to a few metres, and winds may reach speeds which can lift people off their feet and damage unsecured buildings and equipment”.

As they disembark the Polar Bird, the two Western Australian weathermen are phlegmatic about the coming ordeal. Bruce says, “The meteorological work we do in Antarctica is one of the keys to understanding the global weather system. The Casey post is an essential part of an international network of weather stations. Combined we can provide a high-resolution picture of global meteorological conditions. Without us long range forecasting would be much less precise.” Statistics our met’ men have accumulated over the years enables them to track any variations in weather patterns and see if there are long-term changes to the atmosphere. Their work complements the upper atmosphere physics research into global warming carried on at the Davis Base.

The Casey Base is a self-contained, self-reliant little village. Eight main buildings painted in bright reds, greens, blues and yellows comprise the settlement. There is a weather station, a powerhouse, a sewage works, a laboratory building and a radio station. One small, sturdy structure, liberally plastered with the injunction ‘Shut The Door’ houses an artificial greenhouse and hydroponics farm. It supplies fresh vegetables and herbs to the Casey kitchen year round. Most of the living is done in the ‘Red Shed’. It is a giant two-storey, insulated steel container housing a dormitory wing, a hospital, the mess, a theatre and recreational facilities including a bar. Home brewing is popular and there is great competition for the title

of ‘Brewmaster’. The Antarctic Stout I tasted was a fair rival to a good Guinness.

Science is the recurring theme in Antarctica. There is no doubt that we are world leaders. Australian scientists have made a valuable contribution to research into the hole in the ozone layer, as well as addressing fundamental questions such as: is the Antarctic ice cap melting? how does the Antarctic off-shore current drive the other great currents of the world? and how to manage the ecology of the pristine Antarctic environment which in 1989 Australia persuaded the world to declare a Nature Park.



The Polar Bird ready to depart Hobart.

Professor Michael Stoddard, Australia’s chief Antarctic scientist gave me a briefing on our major science projects when I got back to Hobart. Stoddard is an enthusiast who believes that the public deserves to know more about our scientific work on the frozen continent. He makes the point that from the very beginning Australia has been interested in the science of the region. Sir Douglas Mawson, for example, was a geologist more concerned to understand the earth under the ice than racing to the South Pole.

The Australian science program embraces atmospheric sciences, cosmic ray physics, geosciences, glaciology, oceanography, and the biology and resources of Antarctic species. This is science about eternal questions dating back to the evolution of Earth, changes in its atmosphere, climate and ocean currents. “This is the sort of science,” Stoddard says, “which will enable us to tell farmers in the WA wheat belt when it will rain and deep ocean fishermen operating from WA ports about the abundance of the fish stocks.”

An Antarctic base during re-supply is a hive of activity. “We only work during daylight,” one of the barge operators ruefully remarks. “The trouble is, this time of year the sun shines for bloody near 24 hours a day!” Fortunately no-one seems to suffer from ‘big eye’—the inability to sleep during continuous daylight.



Unloading of supplies at Casey Base.

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During the re-supply everybody lends a hand. I spent time unloading endless crates of frozen chicken, beef steaks, lamb chops, chips and greens and what seemed like a tonne of icecream. I think it incongruous that so much icecream is consumed in the world's coldest climate.

Toward the end of the re-supply, when the pressure is off, I'm given a leave pass and manage to make a number of trips. One is up onto the slopes of the Law Dome ice sheet. The Antarctic icecap is up to four kilometres thick and ice on the Law Dome is among the thickest. The Australian Antarctic holds some other records too. The world's lowest temperature—minus 89.6 degrees—was recorded at Casey and the South Pole. And around the base at Mawson some of the world's strongest winds blow. Wind speeds of over 300 kilometres an hour have been recorded.



Containers used for removal of rubbish from Antarctica.

Soon, air travel will replace the sea voyage as the preferred way of getting to Antarctica. We inspect the proposed site for the airport, 50 kilometres inland from Casey, and Australia's first blue-ice runway capable of taking jet aircraft. We have shipped a grader and other heavy equipment down to start the process. When it is completed, Casey, located 3,888 kilometres due south of Perth, will be a 4.5 to 5 hour flight away—about as long as it takes to fly Perth/Singapore or Perth/Sydney. The aim is for a 16-seat Falcon jet to make 25 flights a season directly to Casey. There, two Spanish-built Casa 212 ski-equipped aircraft will run a commuter service to our bases at Davis and Mawson and out to distant field locations. Kim Pitt says, "What is holding back our science effort is time and access. An Antarctic summer is brief and our best and brightest scientists can't always get away over Christmas. The plane is quick. It allows more time on the ground and access to the remotest regions. Weeks that are spent being seasick on the Southern Ocean can be better used to lift our whole scientific endeavour."

I ask him the inevitable question, "Won't this open the door to a flood of tourists and muck up the environment?" Pitt is complimentary about how responsible the private tourist operators are. "The pristine nature of Antarctica is what they sell their clients," he says. "The type of tourist Antarctica attracts wants to keep it that way." But he slams the door on the notion of the airfield being developed for tourists. "No it isn't, and no it won't be used for that purpose," he says firmly.

Kim Pitt's next project is to harness the natural energy of Antarctica to provide

light and power to the Australian bases. This summer he is expecting to ship giant wind turbine generators to Mawson with the intention of later cutting that base's reliance on fossil fuels for energy. "It is pretty blowy at Mawson. The wind speed over the year averages 50 knots. We've had to engineer our windmills to withstand peaks of 140 knots. If we can get the wind turbines set up properly in those conditions, we can extend their use throughout the Australian territory and become largely energy self-sufficient," he says.

It is a sunny day and the temperature is 10 degrees below zero with a gentle breeze. The clothing we have been issued is windproof but not waterproof because it rarely, if ever, rains. Few people realise that Antarctica is a desert. Icy wastes extend to all of the horizons. This seems

an improbable place for an airport but the engineers are confident they have found the right site. Automatic meteorological monitoring equipment has already been installed. Work will begin immediately under the supervision of an American high-latitude airport specialist.

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Antarctica is a wildlife wonderland. Skua, albatross, sheerwater and snow petrels are constantly on the wing. It is easy to stumble upon seals lazing on the ice and whales are often sighted spouting offshore. Occasionally the enigmatic Orca can be seen. But if Antarctica has an emblem it is the ubiquitous penguin. Around Casey and on the offshore islands they are everywhere.

The Antarctic field manual sternly directs that no-one is to approach within five metres of a penguin. That warning does not prevent this tuxedo-suited, flightless bird invading your space however! There are thousands. They waddle along and slide on their bellies, mostly indifferent to the presence of humans, although sometimes they wander over to check you out. Their inquisitiveness can be quaint. The coxswain of our inflatable rubber boat fell asleep while I was onshore for a time. He awoke to feel penguins picking at his red-coloured survival



suit, twittering sagely among themselves about the odd texture of this new raw meat they had found. Penguins perform a neat trick that is a show stopper. They pop vertically out of the water, up into the air and land feet first on an ice floe or snowy bank and then waddle insouciantly off.

Having spent several hours observing a penguin rookery defend itself against the predatory Skua birds, it is clear that the cute image of penguins hides the harsh reality of their existence. Dr Eric Woehler, who has been observing penguin life on Shirley Island off-shore from Casey for a number of years, says, "The arithmetic is frightening. There are over 10,000 penguin couples on the island, they live for about twenty to thirty years, and they average a chick a year. Since the 1960s, when we first checked, their numbers have remained stable. Only about 10% of chicks reach adulthood."

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Across the Gulf from the base is the old abandoned former US settlement of Wilkes. In 1959 it was gifted to Australia and then in turn abandoned in favour of the up-market residence at Casey. Now the original Wilkes station is mostly buried under snow and ice. Only the dilapidated roof structure is visible. Looking in through a skylight the room below is solid with ice, but the ice is so clear I can see the crockery on the table and the blankets on the bed below as if through a pane of glass. Only one building is still in use. It is the old transmitter hut currently a shelter for day trips and overnight stays by visitors from

Casey. It is universally known as the Wilkes Hilton and boasts the most southern outdoor loo in the world with a large picture window that on a clear day offers breathtaking views across the bay to a line of icebergs out at sea. Dr Ian Godfrey of the WA Museum was working on the restoration and de-icing of an old building at Wilkes on the day I visited. He is better known in WA for his heritage work on shipwreck sites along our coast, but he is also a veteran of the effort to reclaim Mawson's hut as an Australian heritage site at Commonwealth Bay 2,000 kilometres west of Wilkes.

Dr Godfrey's work is part of our Human Impacts Program. The early expeditions used Antarctica as a rubbish tip and now Australia is leading the way in cleaning up the mess. So particular is this program that distant excursions from the base travel with special containers to bring back any human waste generated by the party. Some of the old sites like Wilkes pose a conundrum: should we preserve them? can they be contained in situ, or should they be left to the ravages of nature? Mawson's Hut is a national icon and the decision has been made to preserve it as part of our heritage. But once the rusting 44 gallon drums of oil and other contaminants have been taken out of Wilkes, I suspect the rest of the site will be left to the wind and the ice.

Dr Godfrey is keen to preserve some old buildings to keep intact the historical record of human presence in Antarctica.

The Antarctic Treaty bans nuclear weapons and military exercises from this inhospitable continent. During the height of the Cold War, the Treaty nations, including the US and Russia, managed to separate Antarctica from the hostilities.

They did so in the name of science. The international geophysical year in 1956, extended to last eighteen months, gave a huge boost to research and science. As the Polar Bird weighed anchor and steamed north-east into the pack ice bound for Hobart, I felt confident that this spirit would continue. From what I have seen Australia is doing its best to make sure it does. ■

*Senator Cook recently briefed senators and members of the House of Representatives on his voyage to Antarctica.*

Federal parliament's External Territories Committee examines issues relevant to Australia's External Territories, including the Australian Antarctic Territory. As part of its current review of annual reports from the Department of Environment and Heritage and the Department of Transport and Regional Services, the committee is considering the following issues:

- Enhancing Australia's influence in the Antarctic Treaty system;
- Protecting the Antarctic environment;
- Understanding Antarctica's role in the global climate system; and
- Conducting scientific research of practical, economic or national significance.

For more information on the current review by the External Territories Committee, visit [www.aph.gov.au/house/committee/ncet](http://www.aph.gov.au/house/committee/ncet) or phone (02) 6277 4355 or email [jscncet@aph.gov.au](mailto:jscncet@aph.gov.au)



*Shirley Island—a principal site for penguin colonies.*