www.polar.org/antsun
October 28, 2001

The Antarctic Sun

Published during the austral summer at McMurdo Station, Antarctica, for the United States Antarctic Program

Photo courtesy of Steve Trumble/Globec

A team of seal researchers works in 40-knot winds by the light of the research vessel Laurence M. Gould during the dark Antarctic winter.

Winter cruise studies warming world

By Kristan Hutchison
Sun staff

Researchers cruised into the Antarctic winter to study global warming, but what struck them was how quickly the area chilled.

The first of two winter cruises was ice-free. For 20 days in April and May the researchers tossed on rough seas, with winds up to 50 knots (93 kph). Waves washed over the decks as they launched acoustical sensing equipment and sometimes they had to leave it in the water through even worse weather because it wasn't safe to go on deck and pull it in.

"We were pushing the envelope on most occasions," said Peter Wiebe, chief scientist aboard the research vessel *Nathaniel B. Palmer.*

Six weeks after cruising through open water, the two research vessels returned to Marguerite Bay off the Antarctic Peninsula to find it frozen over with ice

See Globec on page 9

QUOTE OF THE WEEK

"There's no such thing as cold weather, only inappropriate clothing."

- an instructor at "Happy Camper" snow school

INSIDE

Grieving, going on from afar

Impact of terrorism not as severe for Antarctic employees

"The terrorists do not function in a vacuum. They don't live in Antarctica. They work, they train and they plan in countries. They're benefiting from the support of governments."

- Defense Secretary Donald Rumsfeld, after the Sept. 11 terrorist attacks

By the Sun staff

Antarctica is not the vacuum the Bush Administration thought. Even at the South Pole, more than 10,000 miles from New York City, Americans learned of the Sept. 11 terrorist attacks almost as they occurred.

More than six weeks later, the effects of the attacks are still being felt, though not with the intensity they have in the U.S.

"If there's a good thing to say about being here and not being home, there is an element of escapism if you need it," said Caprice Stevenson, the winter storekeeper at McMurdo Station.

News of the attacks reached South Pole station as they were happening, which was about 3 a.m. Sept. 12 at the Pole. A scientist happened to be on the phone to the United States and relayed the news, Jerry Macala, South Pole winter site manager, wrote in an e-mail. There is no live televi-

See Terrorism on page 11

Ross Island Chronicles

By Chico

Cold, hard facts

Cargo

Cost of transporting a pound of cargo between Christchurch, New Zealand, and McMurdo Station by resupply vessel: **11 cents**.

Cost by commercial surface vessel: **35 cents.**

Cost by commercial aircraft: **$2.50.**

Percent of cargo transported by resupply vessel, commercial surface and commercial air, respectively: **83, 15 and 2 percent.**

Total cargo sent to McMurdo: **15,898,397 lbs.**

Total cargo sent from McMurdo: **8,446,252 lbs.**

Estimated cost of flying a person and their baggage from Christchurch to McMurdo, or from McMurdo to the South Pole: **$1/lb. for each segment.**

Weight allocations for people and their baggage on Christchurch-McMurdo and McMurdo-South Pole flights, respectively: **310 and 330 lbs.**

Source: Derrold Burnett, RPSC

The Antarctic Sun is funded by the National Science Foundation as part of the United States Antarctic Program. Its primary audience is U.S. Antarctic Program participants, their families, and their friends. NSF reviews and approves material before publication, but opinions and conclusions expressed in the Sun are not necessarily those of the Foundation.

Use: Reproduction and distribution are encouraged with acknowledgment of source and author.

Senior Editor: Kristan Hutchison
Editors: Melanie Conner
Mark Sabbatini
Volunteer copy editor: Lynn Hamann
Publisher: Valerie Carroll, Communications Manager, RPSC

Contributions are welcome. Contact the Sun at AntSun@polar.org. In McMurdo, visit our office in Building 155 or dial 2407.

Web address: www.polar.org/antsun

Crossword: Getting to the Ice

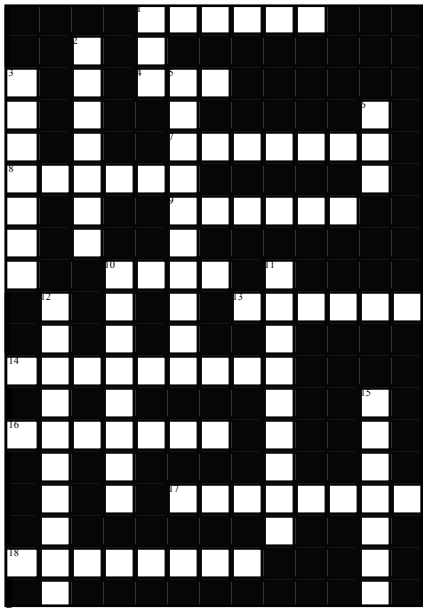
ACROSS

1) Military cargo van
4) Get your gear here
7) The "blue ice" runway
8) McMurdo information TV channels
9) Cargo with no commercial value
10) Some of you have got to go
13) The pre-season players arrive
14) To place on a pallet
16) Used to load pallets on planes
17) Here come the summer workers
18) Those powerful C-130s

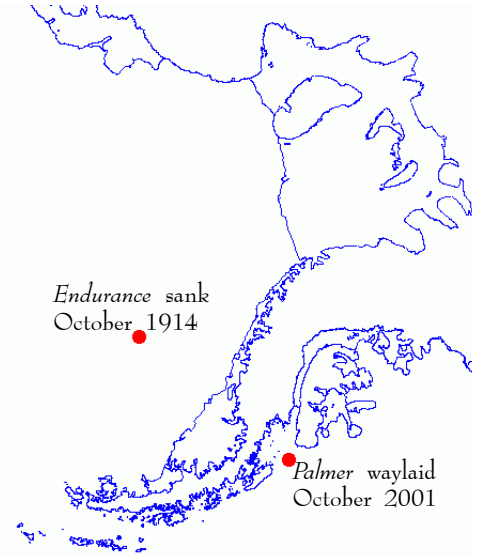
DOWN

1) Where all must pass, coming or going
2) Forget curbside check-in
3) A single aircraft flight operation
5) Initial passenger transport
6) Passing this is Ice-bound bliss
10) Cargo location during vessel offload
11) Non-rotary aircraft
12) Instead of actors, they carry us
15) Look! In the sky! It's...gear!

answers on page 8



Ice in Excess



Digital Coastline: ADD, 2000/USGS-RPSC GIS

By Kristan Hutchison
Sun staff

Sea ice is a fickle thing. Sometimes there's too little. This year there's too much off the Antarctic Peninsula and in McMurdo Sound.

Icebergs large enough to be small states are partially blocking the flow of water to McMurdo Sound, holding the sea ice solid.

One of the bergs, B-15, extends about 1,000 feet down, blocking the currents of water that usually circulate through McMurdo Sound and help move the sea ice out.

"It's turned this whole area into a mill pond," said Ted Dettmar, lead instructor at Field Safety Training Program.

Many years winter storms blow out the sea ice, leaving open water in July, Dettmar said. By the time the Coast Guard ice breakers arrive in December the ice edge is typically 15 to 20 miles (24 to 32 kilometers) away from McMurdo Station.

This year people wintering at McMurdo Station never saw open water, Dettmar said. The sea ice is now 9 feet (3 meters) thick in front of McMurdo, and 10 to 14 feet (3 to 4.4 meters) thick at the runway. The sea ice extends past Cape Bird and Dettmar expects the ice breaker may have to cut through more than 70 miles (113 kilometers) of ice to reach McMurdo.

The Coast Guard has also been keeping tabs on the ice edge situation. The *Polar Star* is coming out of dry dock and is scheduled to start breaking a channel to McMurdo on Dec. 28. The ice could change dramatically by then, said U.S. Coast Guard Lt. April Brown. Or not.

"Of course we are researching contingency plans for both (ice breakers) on a 'what if' basis, just to keep something in the back pocket," Brown said. "That's just prudent planning."

The expanse of sea ice to the north is protecting sea ice nearer, Dettmar said. Sea ice around the Barne Glacier and other areas usually riddled with cracks is remarkably stable.

"Areas where we typically see pressure ridges and fairly major cracks, this year what we're seeing is flat," Dettmar said. "It's made the ice in some ways easier to travel, but for the science groups they don't have anything to study."

Penguins and seals use cracks as doorways, to gain access to traditional rookeries and colonies for rearing young and breeding. With fewer cracks and a more distant ice edge, they must work harder and travel farther to reach these areas. As a result, many are expected to not reach the coastal areas of McMurdo Sound this season. A science group studying Weddel seals has found less than 150 adults in the study area, which extends from Scott Base to Cape Evans. This is less than a third of the number seen by this time last year, said seal scientist Michael Cameron.

"We've known that there's a relationship between ice extent and the number of animals in the study area," Cameron said. He's spent more time in helicopters than usual, searching for seals nearer the ice edge.

"To my knowledge this is the greatest summer sea ice extent that's ever been recorded in McMurdo Sound," Cameron said. "Everybody's guess is that it's due to this giant iceberg off of Cape Bird blocking the swells that would normally break up any sea ice in the area."

At the same time, scientists studying the sea ice actually have an overabundance. Last year the sea ice near McMurdo was 40 percent thicker than usual, and this year it's thicker still, said scientist Dave Cole, from the Cold Regions Research and Engineering Labs. Cole works with a group of scientists studying the structure of ice and how it cracks.

"Our overall goal is to develop a better set of models for the way ice breaks up," Cole said.

Photo courtesy of an unknown passenger on the *Palmer*

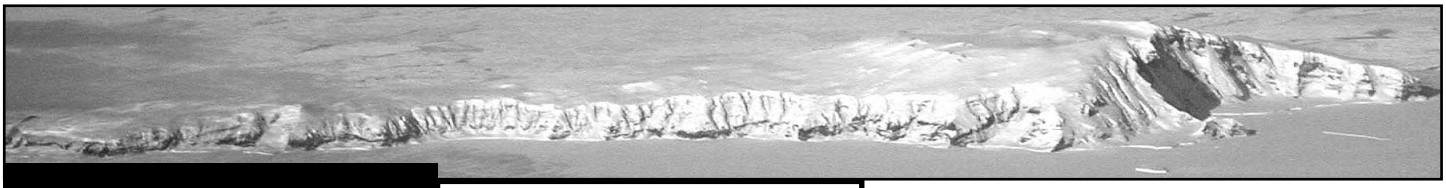
Ice creeps over the railing of the Nathaniel B. Palmer, holding it in Marguerite Bay. The Palmer broke free after the wind changed last week.

To study that, they cut out free-floating blocks of sea ice and record how they react to certain stresses. But if the ice is more than a meter deep it is difficult to cut and work with. Though they'd prefer to be closer to McMurdo, they had to move their camp a few kilometers north, near Cape Barne.

Sea ice researchers off the Antarctic Peninsula also found more ice than they really hoped. Ice piled up to the railing of the *Nathaniel B. Palmer,* extending the research vessel's cruise in Marguerite Bay.

For more than three weeks the research vessel maneuvered in about 197 feet (60 meters) of open water in Marguerite Bay south of Palmer Station, surrounded by slabs of ice that extend as much as 60 feet below the surface. Northerly winds packed the sea ice in around the *Palmer*, an ice-strengthened ship. The *Palmer* can

See Ice on page 4



Perspectives

Rocking and *rolling* on the way to Palmer

By Tom Cohenour
Construction coordinator, Palmer station

People don't fly into Palmer Station. Sure, an occasional twin otter from the Britt station, Rothera, lands on the glacier. And, a couple years ago, four twin otters from Rothera landed on the glacier to pick up passengers who couldn't get into Rothera by ship because of the heavy ice pack. But overall, we don't see many planes at Palmer.

All cargo, scientists and support personnel arrive and depart by ship. That means a five-day crossing of the infamous Drake Passage, some of the roughest seas in the world. After my first crossing and arrival at Palmer, I swore they'd have to fly me out or I'd spend the rest of my life there. Just the thought of another Drake crossing made me seasick.

No big deal, right? Just throw up and get it over with. Sounds painless enough. It's the rest of the sensation that's so unbearable. I've tried the medications; Scopolomine (the patch), Mechlazine, Dramamine and others I can't pronounce or spell.

I've even tried the wrist bands and ginger root. Nada. It's not that the meds don't help, it's that they have their own host of side-effects that create their own unpleasant results. Take the patch for instance. Who wants to have bizarre hallucinations and sleeplessness for five days and nights.?Well, maybe some do. One guy arrived on station wearing the patch. A week later he was still wearing the patch. He left on the next ship.

On board there isn't much to do except watch videos, sleep and eat - if you're one of the lucky ones. In other words, I was just hanging on during the crossing.

Relentless engine sounds permeated my very being; even simple conversation was an effort. My body no longer felt like my own but became part of the big machine droning on and on and on …

Sleep was at first a sanctuary, but after nearly four days in bed, even that had been used by the machine to work its way into my consciousness with the constant drone on and on and on …

There was no escaping it in thought, conversation or sleep. I saw the walls vibrating, felt the sound penetrate my body and heard the unending roar. I felt entombed in a box that reverberated day and night all around me - walls, floor and ceiling. And that was the good news. The rocking motion of the ship was the hard part.

We were nearly into the Straits of Magellan, having spent the last 28 days (or so it seemed), crossing the most inhospitable stretch of water this side of Neptune's Fury. We started off in glorious weather sailing thru some of the most spectacular scenery in all of Antarctica.

Soon after getting into open water the swells grew and grew until they topped out at 18 feet (5.5 m). First Mate Jay claimed it wasn't a storm, but rather the effect of miles and miles of wind blown waves. It really doesn't matter if it's from a storm or wind. The cause had no relevance or bearing; it was the effect on body, mind and appetite.

I lost yet another five pounds. The food has been delicious but I have to ask, why the round food? It's bad enough trying to keep your syrup, gravy, or salad dressing in one place. But why meatballs, green olives, peas, grapes and black olives during 18-foot seas?

The doors were secured and passengers were not allowed outside. The ship was all over the place - up, down, rock, roll, back, forth pitch, yaw. No one warned me that meatballs and olives could be such nimble creatures. I soon realized I'd have to employ a little strategy or go hungry.

By strategically placing my chicken drummie, which by the way had a tendency to flop but at least didn't roll, with the small end towards the center of my plate, I was able to baffle a large juicy meatball long enough to stab it with my fork. In this manner, I was finally able to divide and conquer my meal.

By the time I caught up to all of the runaway food, my plate resembled Swiss cheese and my fork a pretzel. I used a bowl for dessert.

I hope my next meal rolls over and plays dead.

Ice

From page 3

break through more than 3 feet (1 meter) of ice continuously at a speed of 3 knots (3 1/2 mph/5 1/2 kph), and up to five meters of ice backing and ramming. But the ice surrounding it was too thick, so the crew and passengers had to wait for the wind to shift and blow the ice away again.

"They're fine, they're safe, they're doing science," said Al Hickey, marine superintendent for Raytheon Polar Services Company. "They're just going to play a waiting game. The ship's in no jeopardy, the people are in no jeopardy."

The cruise was part of a long term ecological research project, studying the biology and dynamics of the frozen Southern Ocean. This time the researchers particularly wanted to look at the dynamics of ice.

"They are where they want to be. They got what they want," Hickey said. "It could probably be termed a very successful cruise."

The *Palmer* was scheduled to leave Marguerite Bay on Oct. 14, but the six-day delay was not an issue, Hickey said. The ship was stocked with plenty of food, water and fuel. After the ice opened up again Oct. 20, the *Palmer* headed north. It arrived in Punta Arenas Friday morning.

The *Palmer* has broken smaller research vessels out of the ice before, but this was the first time a U.S. Antarctic Program research vessel has been waylaid in the ice for an extended period of time, Hickey said.

During the delay, scientists and crew on board made the best of the unique situation, entertaining themselves with music and foosball tournaments.

"They're actually enjoying, apparently, some incredible scenery, which obviously they wouldn't get otherwise," Hickey said. "And more opportunity to conduct science for a longer period than they expected."

around the continent

PALMER

Spring brings ice, snow and new people to station

By Tom Cohenour
Construction Coordinator at Palmer

Heavy ice conditions prevented the research vessel *Nathaniel B. Palmer* from dropping passengers off at Palmer Station. Taking advantage of the ice, our Glacier Search and Rescue team established a flagged walking route to Torgersen Island where thousands of Adelie penguins have returned to begin their spring ritual. A route was also flagged to Humble Island for science only so the birders could start their counts.

Along the flagged route travelers pass occasional ice holes established to remove water samples for phytoplankton research as well as obtaining krill specimens. Alison Murray's science party is collecting samples to study the gene expression in marine bacterioplankton. They had expected to use a Zodiac to collect seawater samples in Arthur Harbor and the surrounding area.

Fish painting took place using three species of fish left over from a science group. Fish were painted on one side with various colors of fabric paint. White t-shirts, towel, and sheets were placed over the painted fish to create the fish imprint. After ironing and washing, the designs are permanent. So, what's a chionodraco rastrospinosus fish painting look like?

Take a peek.

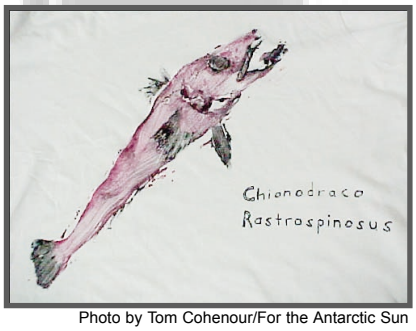


Photo by Tom Cohenour/For the Antarctic Sun
Fish print of a chionodraco rastrospinosus.

Extra effort was required to keep walkways and entrances clear due to heavy snowfall and high winds.

The *Laurence M. Gould* stopped at Palmer to deliver two containers of cargo, including food.

Turnover between the winter-over logistics team and the summer team was completed. When the *Gould* left it took six winter-over crew north with it to Punta Arenas. With their departure the station now has 36 people and the transition has been made from winter to summer staff in the laboratory, power plant and clinic. The electrician and communications technician are in the middle of turning over their duties.

Photo by Tom Cohenour/ For the Antarctic Sun
Snow sticks at Palmer Station.

SOUTH POLE

Long, cold winter full of challenge and success

By Jerry "Mac" Macala
South Pole Winter Site Manager
Amundsen-Scott South Pole Station

A summary of the past winter? It's strictly a matter of perspective, and we had 50 different winter experiences here at pole this past year. Fifty-one actually if you count the medevac'd doc.

From my perspective it's been a long year in some respects and a blink of the eye in others. Many of us arrived on first flight this time last year and have called the South Pole home ever since. By the time the summer folks were frantically wrapping up their season and feeling like they'd had enough, we were just getting ready to get in gear.

The place takes on a magical quality when that last plane leaves and the doors close for good. There's no easy way to describe it except to consider a group of 50 near-strangers placing their trust - and indeed their lives - in each other's hands. All for the sake of experiencing what only about a thousand humans have ever accomplished: a winter at the South Pole.

Add a dash of aurora australis and a pinch of sastrugi, and you have the ingredients for a fine season. Don't hold back on the patience, tolerance and mutual respect; they will only improve the recipe. Mix well and bake outside at -100F for six months. Keep a close eye on it as you don't want to toast the edges! Brush off the drifted snow when the sun comes up and have a look at what you made. Save a little for a few years down the road and see if it improves with age. It almost always does.

That's been my experience here. The challenges have been many: we prepared a skiway in the dead of winter and supported the winter landing of a Twin Otter to medevac our doc; we finished piping in the outfall tunnel and did interior work in the new station with limited supplies and lots of questions; we wrestled with the inevitable quirks of a new power plant; we had personnel problems and personal problems. People can do amazing things when given the chance. In the end this crew pulled it all together in ways that none of us could have ever imagined.

It's been a good year.

SHIPS

Gould launches crew to check on weather station

From report by Andy Nunn

After trying on and off for six months, the research vessel *Laurence M. Gould* was finally able to launch a zodiac to Racer Rocks to check on a malfunctioning weather station on Oct. 16.

Winds were 2 to 5 knots and the sea swell was mild, but daylight was fading fast. After circling the island looking at the combination of cliffs and ice, John Evans and Andy Nunn made it to shore.

The weather station appeared to be in good shape. It was mostly free from ice and snow, and the guy wires were still solidly anchored. Nunn did find damage to the solar panel, which he guessed was causing the problem.

the week in weather

McMurdo Station
High: 13F/-11C Low:-26F/-32C
Wind: 48 mph/78 kph
Windchill: -83F/-64C

Palmer Station (week ending Oct. 19)
High: 37F/3C Low:12F/-11C
Wind: 84 mph/135 kph
Snowfall: 7 in./17cm.

South Pole Station
High: -45F/-43C Low:-64F/-53C
Wind: -37mph/-59kph
Windchill: not available

FIRE

British Antarctic Survey file photo

Flames engulf the Bonner Laboratory at the British Antarctic Survey's Rothera Station. The Sept. 28 fire destroyed the facility, resulting in the cancelation of at least three research projects.

British laboratory lost in flames

Destruction of Rothera lab can be lesson for Antarctica firefighters, trainers say

By Mark Sabbatini
Sun staff

A recent fire that destroyed a laboratory at the British Antarctic Survey's Rothera Research Station is being described as a "major blow" to their research programs. But some good can also come from the incident, said Ted Cocco, a first-year firefighter lieutenant at McMurdo Station.

British firefighters were at times forced to crawl on an ice runway in 90 mph winds as they attempted desperate tactics such as blowing snow on the roof of the Bonner Laboratory in their vain attempt to save the building. Cocco, a Providence, R.I., resident who has more than 20 years of experience as a training officer, said the fire can be used to study ways of preventing similar incidents and emphasizing the need to avoid becoming complacent.

Cocco and Randy Muntz, a firefighter lieutenant with six years of experience who is working his second year at McMurdo, went to the South Pole Station on Oct. 24 to train more than 30 workers who will be part of that station's volunteer firefighter brigade.

"You have to put realism into what people think," Cocco said. "There's never been a fire at the Pole ... We can use this to show them it can happen."

Much of what firefighters are taught will depend on what caused the fire, Cocco said. BAS hopes to have a report from an independent investigator by November, according to agency Press and Information Officer Athena Dinar.

The Rothera station, located on the Antarctic Peninsula, is the BAS center for biology, geoscience and atmospheric science programs. The Bonner Laboratory fire occurred just after 1 a.m. local time Sept. 28, with a fire alarm alerting staff to smoke and flames in the loft of the lab, according to a prepared BAS statement.

Rothera Mobile Plant Technician Steve LeBretton, in an account written for the BAS Web site, stated little could be done except rescue some research equipment and photographs.

"I think we all knew it was not going to do much good but it was worth a go," he wrote, "so we had the snow blower throwing snow over the building and had a pump pumping sea water from the sea across the runway to the fire engine and then every five minutes we could use the fire engine to pump the water to the fire hoses."

No injuries were reported among the 21 wintering staff. BAS plans to replace the $2.9 million facility, which represents an estimated 15 to 20 percent of the BAS program.

"If the building foundations have not been destroyed by the fire we are hopeful to start building next summer season," Dinar wrote in an e-mail to the Sun. "The laboratory would therefore be completed for the following summer season."

Two collaborative projects for the 2001-02 season and one for 2002-03 have been cancelled so far due to the fire. BAS says it plans to cope with the lab's destruction by using temporary facilities at Rothera and conducting some analysis research in the UK, but "the loss of the Bonner Laboratory diving facility, aquarium and laboratories is a major blow."

"Although the long-term biological monitoring that contributes to our understanding of global change is the hardest hit, it is not alone in being affected significantly," the agency's statement notes.

Firefighters at U.S. stations in Antarctica can learn plenty from the difficulties encountered and methods used at Rothera, said McMurdo Fire Chief Dave Turley.

"A quick response is almost a necessity if you want to save a building," he said. Structural collapse is generally imminent after 20 minutes of heavy flames in the mainland U.S., but Antarctica firefighters have about half as long.

Turley said he also would advise firefighters against using snowblowers to douse a fire.

"When you're throwing something on a fire you're just trapping the heat and gasses," he said.

The South Pole and Palmer stations have avoided fires, but McMurdo hasn't been as fortunate, Turley said. As recently as last year there was a fire in the power plant that was put out by the power plant operator.

"If you can imagine this community without power it would be an immediate emergency situation," Turley said.

Brigade members at the South Pole and Palmer stations get a week of basic training. Turley said brigade members have proven adept at improvising out of necessity to requests for help when needed, but the volunteer nature of the operations could be a factor if a serious incident occurs.

"In those situations it's tough because you don't know how many people you have behind it," he said.

While a final assessment of the Rothera situation can't be made yet, Turley said firefighters there passed the most important test.

"You've got to give the Rothera people credit that no one got hurt," he said.

Photo by Jeff Scanniello/ Special to the Antarctic Sun

A snow blast clears a path at McMurdo Station in preparation for the summer season.

Making the transition at Winfly

By Melanie Conner
Sun staff

Alaska native Lee Parker wanted to see aurora australis and determine for herself how the southern winter night compared to its cousin in the northern hemisphere.

Parker never saw the southern lights. Instead she saw nacreous clouds, which she and others consider to be a gift after arriving in Antarctica in mid-August with Winter-Fly-In, better known as Winfly. Every year nearly 250 United States Antarctica Project participants arrive at McMurdo Station to prepare its buildings, offices and equipment for the arrival of the mainbody population consisting of hundreds of scientists and support staff in early October. Thus, Winfly marks the transition from a quiet and isolated winter camp to a bustling, fasted-paced science station.

However, those who arrive during Winfly also witness the transition from darkness to lightness intermixed with the scenes of nacreous clouds, rosy alpenglow and sunsets that can often last for hours as the sun circles the sky low over the horizon. This year as the sun awoke and daylight gradually gained time on darkness at a rate of about 20 minutes each day, the workload for the nearly 250 early arrivers came suddenly upon the day of their arrivals.

"I volunteered for Winfly for both professional and personal reasons," said Parker, an e-mail administrator at McMurdo, who started her second austral summer in August. "I wanted to see the pure night sky and I wanted the chance to do more preparations for the summer on some projects at work."

"The daylight kind of sneaks up on you," said Glenn Gordon, computer, printer and copier technician from Florida about his third Winfly, "I feel like I never left. This is my job. I just got right back into it without skipping a beat."

See Winfly on page 8

Winfly From page 7

While those who lived and worked at the station over the southern winter contributed to McMurdo preparations, the increased number and expertise level of the jobs required additional staff. Gordon's main responsibilities during his six weeks of pre-season work are to prepare, clean and set-up computers, printers and copy machines in the offices throughout McMurdo. He also assists the winter-over computer technician with any unresolved technical problems that occurred over the winter.

Housing Coordinator Debbie Lisman and her crew of eight janitors opened and prepared unoccupied dorms and work centers by scrubbing floors, cleaning carpets and redistributing furniture. A survey crew, heavy equipment operators and others spent six weeks building the ice runway. This job required designing and planning placement, drilling the ice to test its stability, clearing snow and building roads, and establishing air traffic communications. The ice runway was used for the fleet of military C-141 aircrafts to bring the main-body of participants to the Ice.

"The feel about town is a relaxed excitement," said John Sale, surveyor and fourth-time Winflyer, in an e-mail. "It's the first sign for winter-overers that their stint is about over." And for those who arrived, there is excitement about coming down for the new season." Winter-over participants responded differently to the arrival of new station crews ranging from excitement to withdrawal.

"People seem like they talk louder, move quicker. It's great to have new energy when everyone's kind of tired," said Shannon Wilson, who worked over the winter in the paint barn at McMurdo Station "The winter slows you down quite a bit. You feel mossy."

However, science technician and winter resident, Glenn Grant said his initial reaction to the newcomers was to withdraw because the sudden influx of people was overwhelming. Grant added that he adapted after a few days with the arrival of scientists, whose research increased his workload.

> **"(Winfly) people seem like they talk louder, move quicker. It's great to have new energy when everyone's kind of tired ... The winter slows you down quite a bit. You feel mossy."**
>
> ***Shannon Wilson, winter-over resident at McMurdo Station***

Winter-over residents at Amundsen-Scott South Pole Station saw new faces of transition with the arrival of the South Pole crews aboard Operational Opening Flights that started Oct. 24. To facilitate the ease of transition, the newcomers were warned that current residents have been isolated at the Pole for over eight months and are anxious to receive mail, eat fresh produce, and leave the Ice.

"I got e-mail from some Polies with a list of things they wanted me to bring them. They wanted ginger ale, so I am bringing a couple of cases of ginger ale down for them. That will be neat," said information technician and first-timer to the Ice, Henry Malmgren.

He added that he is trying to be very sensitive to their needs, because he signed a year contract and knows that next year he will be the one at the Pole waiting for the newcomers to relieve him of his duties as he says goodbye to the Antarctic winter.

Answer for crossword from page 2

Continental Drift

"What extra items did you pack for the season and why?"

"Easy Rider magazines...It's going to be a long time till I can ride my Harley again."
Tom Curran
FEMC electrician
Palmer Station

"I bring toys. I like to have some surprises for the people at camp. Blowing bubbles in the Antarctic can be fun."
Leslie Blank
camp manager
Siple Dome

"A hand blender... a full supply of (protein) supplements... my numchucks...eight books (and) an array of colored pens and pencils, just to send cards out to people."
Sean Keating
firefighter
McMurdo Station

Photo courtesy of Steve Trumble/Special to the Antarctic Sun

Steve Trumble approaches a crabeater seal with drugs loaded, while Nick Gales waits with the net during a winter research cruise in Marguerite Bay off the Antarctic Peninsula.

Globec

From page 1

about a meter thick. Several times the *Palmer* had to break the research vessel *Laurence M. Gould* out of the ice, a challenge the National Science Foundation had planned for when sending the ships down together.

The winter cruise was a first for the *Gould.* The *Palmer* had been down in the winter before, said Jose Torres, another chief scientist for the April cruise.

"It's had several winter cruises. It hasn't had one to my knowledge that's been quite like this one," Torres said. "The idea is to get a physical, biological and chemical grid to understand the over-wintering strategies of krill on the shelf."

The Antarctic research is part of a worldwide study, piecing together the impact of global climate change by looking at key species. The Global Ocean Ecosystems Dynamics Program, or Globec, started in Georges Bank off the coast of New England in 1993, where they studied cod, haddock and some species of copepods, small crustaceans. Related studies are ongoing in Alaska, California, Canada, Japan, Norway and Korea.

"We were trying to key in on certain processes that are very likely to be affected by climate change, and in the Southern Ocean sea ice dynamics is a critical process that is very likely to be impacted," said Michael Fogarty, chairperson for the U.S. Globec scientific steering committee.

Warming in the polar regions could melt the ice, changing the habitat for Antarctic species.

The sea ice study could have been done in the Arctic, but the Antarctic was ideal because there are fewer species involved in a fairly simple food web, making it easier to study, Fogarty said. At the center of the Antarctic food web are krill, the tiny, shrimp-like crustaceans which the Globec cruises studied.

Marguerite Bay area was selected as the cruise destination because it's a favorite wintering area for krill all along the western shelf and possibly out to South Georgia Island. A stream of water also flows into Marguerite Bay from the ice shelf. This stream was thought to create an upwelling current, which moves nutrients through the water and keeps the ice thinner in the bay. Thinner ice makes it possible for fish, seals and other Antarctic animals to feed on krill there all winter.

Though the cruises found a pattern of water circulating clockwise around the bay, it wasn't enough to keep the ice thin this winter. After the tumultuous April cruise, both research vessels returned in July to find the sea flat, still and frozen.

"I've never been on a cruise where the ship didn't rock and roll before," Wiebe said. "That doesn't mean it didn't move. You get funny movements when you're breaking through the ice. It stops and starts."

The ice brought its own challenges. As the *Palmer* cut through the ice pack it left a wake of thick ice chunks, which snagged on the wire towing the MOCNESS (Multiple Opening/Closing Net and Environmental Sampling System), one of the primary pieces of scientific equipment. The first time it happened Wiebe had 1,575 feet (480 meters) of wire played out, so when the Palmer stopped to clear the wire the MOCNESS dragged along the bottom. By the time they pulled it to the surface two minutes later, it looked like a car that's been hit head on at 30 mph (48 kmph), Wiebe said.

"The whole outside structure was destroyed and we were lucky to still have it," Wiebe said. "That stripped the tail assembly off, all the feet were stripped off, any instruments off the main towed body were smashed to smithereens, and one camera was flooded with sea water."

The entire apparatus had to be disassembled. After three days of around the clock repairs by the ships crew and Raytheon Polar Services staff, the MOCNESS was launched again.

After that they watched the wire for ice and learned to never let out more wire than

See Globec on page 10

Globec From page 9

there was depth, Wiebe said. But the depth changed quickly, sometimes going from 1,968 feet (600 meters) depth to 328 feet (100 meters) in less than a kilometer. The crew would race to pull up the equipment before it dragged along the bottom.

They charted the bottom as they went, since the existing sea charts are sketchy and inaccurate. At places the coastline is drawn as much as 20 miles (32 kilometers) off from where they actually found it. The understanding of the krill population dynamics will depend in part on the topography of the sea floor, which provides habitat and influences water flow. In Marguerite Bay the sea floor appeared to be incredibly complex and uneven. Some places mapped to be 328 feet (100 meters) deep actually turned out to be 3,280 feet (1,000 meters), Wiebe said.

"Towing in pack ice is a really treacherous thing to try to do," Wiebe said. "On the other hand, there's almost no other way to get the information."

The first cruise produced a high concentration of krill in some areas. Wherever they found clusters of krill, the researchers also found humpback and minke whales, fur and elephant seals, penguins and other birds. Sometimes they found the krill by following humpback whale songs, Wiebe said. The larger animals became part of the study as well.

"To understand the dynamics you need to understand who are their predators and who they're feeding upon, who their prey is," Wiebe said.

With winter's meager 6 1/2 hours of daylight, the researchers often worked in partial darkness, and always complete cold. Steve Trumble's first attempt to draw blood samples from an crabeater seal failed when the instruments and blood froze. After that he carried everything in a heated pouch and taped heat packs around the needles and syringes.

"We used boxes and boxes of heat packs," Trumble said.

Though Wiebe works in similar temperatures in the Arctic, he also struggled a few times with buckets of samples freezing.

"You bring your nets out of the water and the nets immediately freeze up into a block of ice," Wiebe said.

He tried to run sea water on the samples to thaw them out, but found chunks of ice coming out of the hose.

Cold never stopped their work, but a few times the winds reached 70 mph (113 kph).

"That's tough. You cannot go out," Trumble said. "As soon as you open up a cooler the equipment blows away."

Weather wasn't the only change from the summer. Trumble had sampled crabeater seals in the Antarctic summer before, when they are lean and fast. Trumble once ran after a seal for 45 minutes, wearing bunny boots and a mustang suit. He'd tackle the seal, which usually thrashed about until it was sedated.

Photo courtesy of Steve Trumble/Globec

Seal researchers Dan Costa, Nick Gales and Steve Trumble embark into the field from the research vessel Laurence M. Gould.

> "Towing in pack ice is a really treacherous thing to try to do."
>
> **Peter Wiebe, chief scientist aboard the *Nathaniel B. Palmer research vessel***

"They make these sounds like they're evil," Trumble said. "It's kind of a guttural demonic thing that would probably give little kids nightmares, but we're used to it."

With the chase in mind, Trumble trained for the winter cruise by playing basketball and running regularly. He was surprised to find the seals are completely different beasts with their winter insulation. An average two-meter-long seal will weigh about 440 pounds (200 kilograms) in the summer, but 660 pounds (300 kilograms) in the winter. Fat and sluggish, the seals were usually sleeping when Trumble crept up on them.

"It's like working on a whole different species," Trumble said.

Trumble tagged 16 seals, attaching radio transmitters to their heads. The results were almost immediate. The researchers were able to watch the seals every movement, tracking where, when and how deep they dove. The seals seemed to move around the Adelaide Island area on the north side of Marguerite Bay, where they'd been tagged.

"Nobody really has done this before, so we didn't know what to expect," Trumble said. The biggest surprise was how deep the seals dove, from 1,312 to 1,640 feet (400 to 500 meters). Typically crabeater seals dive from 197 to 262 feet (60 to 80 meters) to feed in the summer.

Though in the summer krill generally thrive in the top 164 feet (50 meters), Trumble surmised that some krill must be deeper to draw the seals.

"They wouldn't go down there unless they had some reason," Trumble said. "It's probably a food issue."

Trumble's theory matches what Jose Torres found in the nets pulled up from 656 feet (200 meters) deep and below. Clusters of krill were living deeper in the winter sea.

Wiebe expected the krill population to drop in the winter, but was surprised by how dramatic the change was from the first to the second cruise.

"You end up with almost no counts at all because you're just looking at empty water," Wiebe said.

Torres also found some high density of larval krill while scuba diving during the survey cruise. The larvae were mostly on the northeastern section, separate from the adults and closer to the surface. Wiebe said one theory holds that the krill collect under the ice surface because they can feed well there and are harder for their predators to catch.

The krill feed on micro-zooplankton or phytoplankton growing on the underside of the ice, noticeable because it gives the bottom side of the ice a golden brown color. They sent a remote operating vehicle under the ice surface to record the plankton growth.

The science team collected data on winter krill metabolism and consumption to compare with similar information from the summer. Over the next year they will try to make sense of the raw information.

"We've got a huge dataset that's coming in," Wiebe said. "It's going to give us quite an insight into what's going on in the winter."

Now that the scientists have brought their data home, it will be entered into mathematical models that take into account the physics and biology of the sea to create a better understanding of how the entire system works.

"We don't really know what we got yet," Torres said. "Your first impressions are sometimes wrong."

The Globec scientists will return to Marguerite Bay again next winter to finish the study. Eventually the Antarctic results will be combined with results from the international Globec projects to gain a whole world view of the far-reaching interactions of climate, current and tiny crustaceans.

"If we're going to meet the full promise we need to compare and contrast the studies once the field work is completed," Fogarty said. "What we really want to do is try and extract the broader lessons to how these systems respond, to really pull out the big picture."

Terrorism

From page 1

sion to the South Pole or Palmer Station, so the two research stations took turns getting news from a satellite they share called LES-9.

Macala made work optional at the South Pole that day so people could deal with the news, he said.

"Some folks went back to work, but many just sat around in a daze and listened to news reports in the galley," Macala said. "It was certainly difficult to be so far away. Many of us have friends in New York and were worried about their safety, and the safety of the rest of our friends and family throughout the country."

At McMurdo Station, where there is television, Stevenson and other workers watched the news over breakfast in the dining hall.

"Everyone was pretty much watching, with their eyes glued to the TV," Stevenson said. "I had immediate fear because my family's in Washington, D.C."

She managed to call home and check that her family was safe.

"On the station on that particular day we told people to relax, don't work as hard and try to get in touch with your family," said Jim Scott, the McMurdo area manager.

Once Stevenson knew her family was safe, she was glad to be far from the attacks.

"Probably we were feeling more secure than anyone else in the world at that time," Stevenson said. "I doubt anyone's going to come drop a bomb on Antarctica."

For those at Palmer Station, the shock of the attacks was compounded by an earlier tragedy, according to station manager Bob Farrell.

"The community had just learned days earlier that their friend and fellow winter-over, Thomas Leipart, had passed away in Punta Arenas, Chile, on his way home," Farrell wrote in an e-mail. "People pulled together and supported each other as was seen elsewhere."

Raytheon Polar Services Company offered counseling services with the human resources office in the U.S., but as far as Scott knows none of the Antarctic employees lost family or other loved ones in the attacks. However, Scott said one employee not directly affected by the attacks decided to go home early.

Raytheon also called Father John Coleman, who was vacationing in Marlborough Sounds, New Zealand, and asked if he could be listed as a contact for support in an e-mail the company was sending out. He sent a message to Antarctic workers and others on his mailing list, offering sympathy and prayers. He wrote about the extraordinary power of spirit that allowed people to commit such an act of destruction and how "one day it's through that power of another Spirit that we'll be one again."

"I began with the greeting 'Today we are all Americans,'" Coleman said, noting he used the phrase before it gained worldwide fame. "I knew it was a significant message and I examined every word," he said.

Coleman said he received about 50 responses within 24 hours from those on his list. He said nearly everyone on his list at the McMurdo and South Pole stations eventually responded.

"I must admit I sat in tears at my computer a time or two as I read the responses from people," he said.

All three Antarctic research stations raised and lowered American flags.

"I suppose this was our way of 'taking control' of the situation," said Macala, who took a photo of the lowered flag flying over the South Pole Dome to send back to Denver.

Extra American flags were flown at the Palmer station's flagpole and other flags were hung on walls around the station, Farrell noted.

At McMurdo the 12 poles where flags from countries which signed the Antarctic Treaty normally hang all flew the Stars and Stripes at half-mast. The following Saturday McMurdo residents observed a moment of silence at a stationwide meeting.

See Terrorism on page 12

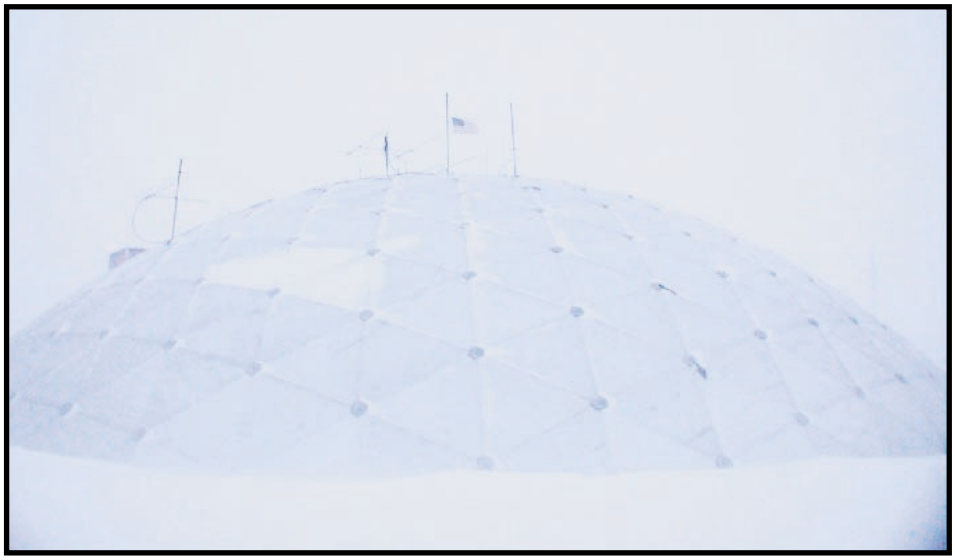
Photo by Mariah Crossland/Special to the Sun

Father John Coleman, middle, and John Meyers, listen to Stefan Pashov during a political discussion on terrorism held in the McMurdo library.

"The only way to be safe is to make sure everyone in the world is safe, but not safe under guns, really safe. Free."

Stefan Pashov, a materials worker at McMurdo Station

Terrorism From page 11



The American flag flies at half-mast on the South Pole dome after the Sept. 11 terrorist attacks in the United States.

Photo by Jerry Macala/Special to the Antarctic Sun

"I felt pretty disconnected from the attacks. It seemed like a lot of people were just kind of in shock," said Shannon Wilson, who worked over the winter in the paint barn. "I feel kind of glad I wasn't there."

The attacks prompted low-key political discussions, both formal and informal, but Scott said the overall impact probably didn't hit many employees as hard as people in the U.S. After about two weeks, the talk returned to other topics.

"It was also a relief to not have the constant media bombardment here," Macala wrote from the South Pole. "The day after the incident we all went back to work, and although the world was forever changed, at least we all had the opportunity to start healing in our own way."

America's bombing of Afghanistan revived the political discussion at McMurdo Station. About 30 people gathered in the library Oct. 16 to debate America's response and responsibility for the terrorism.

Though Robbie Liben's New York friends and family narrowly escaped the attacks, he believes the U.S. should be doing more soul searching than bombing. He listed American military activities since World War II, including the attack on Tripoli, Libya in 1996, as reasons foreigners would have to hate the U.S.

"I don't actually see much of a difference between bombing Tripoli and bombing New York, even though it's my home," Liben said. "As a New Yorker I'm angry that my government puts my city at risk by bombing other cities."

Others felt the U.S. is engaged in a clear-cut battle.

"It's good vs. evil, just the same as when we took out Hitler and the Japanese," said Brad Hasley, construction coordinator for Facilities, Engineering, Maintenance and Construction. "We were attacked, we know who did it and I think we should go after him and get him."

Some people feared a loss of personal freedoms or the escalation of the war. They preferred to imagine a more peaceful scenario in which the standard of living and rights of people around the world is raised.

"The only way to be safe is to make sure everyone in the world is safe," said Stefan Pashov, a materials worker at McMurdo. "But not safe under guns, really safe. Free."

Whatever the morals of America's military activities, the nations response to terrorism has some direct impacts on Antarctic operations.

Cargo shipments were put behind schedule as two of seven C-17 cargo flights were cancelled when the military aircraft was pulled for other uses. Mark Vincent, terminal operations acting manager for McMurdo, said smaller C-141s are flying some extra missions until the backlog is caught up. The C-141s carry 42,000 pounds (19,000 kilograms) of cargo compared to 100,000 pounds (45,500 kilograms) on the C-17s.

"With the two C-17s being pulled out we have to play a wee catch-up game," said Vincent, a New Zealander who was himself filling in for a National Guard member who was called to duty because of the attacks.

Shipments may also be slowed somewhat by tighter security, Vincent said.

"People are becoming more conscious, looking at descriptions on boxes much better and just being more aware of their environment," he said.

But Vincent and other officials said the backlog and resulting delays should not be significant. The C-141s are flying extra missions until cargo shipments are caught up. Scott said items are routinely prioritized, with personal cargo, freshies and mail often left behind in favor of scientific and other critical equipment. Cargo delays are common in the Antarctic program anyway because of difficult weather, landing conditions or equipment.

"For all those people who have been here this is no great shakes," Scott said.

The uncertainty in the U.S. could make Antarctica more popular. Coming from Ground Zero, as the site of the destroyed Twin Towers is now called, First Sgt. David Kolb of the New York Air National Guard considers his month-long duty in Antarctica a respite. Kolb, who is also a sergeant with the New York State Police, spent three weeks assisting with rescue and recovery operations at Ground Zero.

He left Sept. 30 to come to Antarctica and prepare his crew for the arrival of four LC-130 aircrafts. Kolb said the change offers him mental and physical recuperation. He is no longer saluting his fellow fallen officers or standing at attention for civilian victims as their bodies are carried away from the rubble.

"I tell my mom not to worry," Kolb said. "That I will come down here and get some sleep finally."

Chaplain Norm Williams said he has been counseling more people in light of the terrorism and America's response. Some of them don't want to leave.

"Some are anxious about their families back home and want to return as soon as possible, while others want to extend their stay at least 12 months," Williams said. "They think it's the safest place on Earth."

•••••

Kristan Hutchison, Melanie Conner, and Mark Sabbatini contributed to this story.

Getting through tight security

By Mark Sabbatini
Sun staff

The warnings from airports were dire: Arrive five hours early for international flights. Avoid all carry-on luggage. Don't try bringing so much as a nail clipper past security.

Television images of travelers stuck in massive lines and missing flights due to tighter airport security were common as those working the summer season in Antarctica prepared to depart. But workers, many of whom took a few extra precautions, generally said they were spared the travel horror stories resulting from the Sept. 11 terrorist attacks and weren't forced to leave any favorite items behind.

"It was easy," said Lori Boruch, a Pennsylvania resident working her first year as Raytheon Polar Service Company's human resources director. "It was like literally half an hour from the time I got to the counter to the time I got to the gate."

Boruch, whose trip originated at Denver International Airport, arrived at the airport more than five hours before her scheduled departure because her husband was booked elsewhere on an earlier flight. She said she didn't leave any items at home due to tougher security restrictions, but made sure a metal hair pick was packed in her suitcase instead of her carry-on.

Kim Orrico, a first-year galley worker from Chicago, said she made it through the security line at the Chicago airport in about 15 minutes and at Los Angeles International Airport in about 30. She said the worst part was the restriction allowing only ticketed passengers into the concourses.

"The thing that was really horrible was you had all that time to wait and your family can't be with you," she said.

Not being able to mail anything from the airport was a nuisance for Sean Keating, a first-year firefighter from Colorado Springs. He said he was trying to send some information about the RPSC program from the Los Angeles airport to his grandmother at the last minute.

"Even if you have a ticket they won't take anything from you," he said.

Some interviewed said they waited in security lines for up to two hours, and a few reported having small items such as razors and nail clippers confiscated. There seemed to be little uniformity, however, in how the new restrictions were enforced at various airports.

Photo by Mark Sabbatini/The Antarctic Sun

Maxine Munro of Aviation Security Service in Christchurch, New Zealand, checks First Sgt. Dave Kolb of the New York Air National Guard on his way to McMurdo Station, Antarctica.

Matt King, a first-year firefighter from Flagstaff, Ariz., said he didn't see any security when he flew the weekend after the bombing, but things were notably beefed up when he departed for Christchurch.

"There were a lot more people at the airport and the National Guard was there and you had to show your ID to get on the plane," he said.

Still, King said he made it through security in 30 minutes instead of the 90 he was told to expect. He said he packed two knives into his checked baggage that he normally would have put into his carry-on bag.

Security at U.S. airports was still well below what Shane Gabbard, a first-year general assistant from Oakland, Calif., said he experienced while traveling in Israel a few years ago. He said he went through a 45-minute interview with security officials, who called a person he said he stayed with to verify he was telling the truth.

"Going through an Israeli airport, I don't think Americans would stand for it," he said.

Security issues didn't end after workers departed the United States. Bill Ewing, Raytheon Polar Service Corp.'s chief of operations, advised employees during an orientation session in Christchurch, New Zealand, not to wear U.S. flags, t-shirts or engage in shows of patriotism.

"The bottom line is you are a guest in a foreign country and it really is in your best interest to maintain a low profile," he said.

Tighter security measures were in place for transport flights from Christchurch to McMurdo, with carry-on baggage checks and metal detector screenings conducted by regular airport security personnel. Ewing told southbound employees to carry two forms of identification during check-in and to expect a longer wait than usual to get through the screening process.

"You don't want to bring any sharp items in your carry-on or person," he said. RSPC would try to mail confiscated items, he added, but there were no guarantees.

"Just a handful" of razors were confiscated from those departing from Christchurch, with fewer found as time went on, said Peter Wilson, an Aviation Security Service supervisor who was among those conducting security checks.

"By the time they've got here they've been spoken to so many times they've just about got it all sussed," he said.

Profile

DR. ADVENTURE

By Kristan Hutchison
Sun staff

DR. Ron Shemenski refers to his mid-winter medical evacuation from the South Pole as a kidnapping.

He's only half joking. Shemenski didn't want to leave the bottom of the world, even though he was suffering from pancreatitis and subsequent tests showed he'd had a mild heart attack while at the South Pole. He does agree, however, that it was critical to bring in a replacement doctor to care for the others working at Amundsen-Scott Station at the South Pole in case he was incapacitated.

Now working in Denver as Chief Medical Officer for Raytheon Polar Services Company, Shemenski pulled out a photo of the silver South Pole dome when asked where home is.

"This is home," the 59-year-old doctor said.

It can't really be, since nobody officially lives at the South Pole. So even if his heart is at the Pole, Shemenski's house is outside Oak Harbor, Ohio, on the edge of the Portage River.

Shemenski put in his time at home already, rooted 14 years in the community as a rural physician. Being on-call 24 hours a day, seven days a week left him burnt out. Now he's rarely there even six months, the length of time he was at the South Pole. His work as a locum tenens, a temporary doctor who fills in where needed, takes him from village to small town around the world.

Photo by Melanie Conner/The Antarctic Sun

Dr. Ron Shemenski enjoys a Sunday afternoon in Rocky Mountain National Forest while working as the medical director at Raytheon Polar Services in Denver, Colo.

"I think I'm 50 percent gypsy," said Shemenski, who is actually half Polish and half Hungarian. "I really enjoy going back there (to Ohio), but after I'm home for a while I get the urge to move."

He once worked six months in the Australian outback, filling in for vacationing doctors in villages all over Queensland. On his vacation he stayed on a cattle ranch with a family and their pet kangaroo, possum and a Brahman heifer.

"It would come up behind you to get its ears rubbed like a dog," Shemenski said. "It's hard to look at a McDonald's hamburger after that."

FLYING DOCTOR

Though Shemenski's medical career has taken him all over the world, the one place he really wanted to go was up, into the sky.

Flying was Shemenski's boyhood dream, but his father was a steelworker and there wasn't money for flying lessons. Instead Shemenski became a metallurgical engineer. His first job was in Tennessee.

"We moved down there and I put my last $100 bill down on flying lessons," Shemenski said. "We ate peanut butter and jelly for the first month."

Shemenski learned to fly in the Appalachian Mountains from the same flight instructors who train Moody missionaries and by August of 1970 he had earned his wings.

While he loved to fly, Shemenski was dissatisfied by his research work inside a nuclear reactor. It was too esoteric and he wanted to do something with a practical application. A knee problem brought him into the doctor's office and he developed an interest in designing artificial joints. At 33 he applied to medical school. There he discovered that though he didn't like doctors, he liked being one. He decided to combine medicine with his love of flying and bought a plane big enough for a stretcher.

His first medical position was at a 15-bed hospital in Tonaha, Nevada, halfway between Reno and Las Vegas. From there he served the outlying communities.

"Every Thursday morning I would get up at sunrise and fly out to small towns in the desert to see patients," he said.

Since then he's used planes more for fun than work. An aerobatic pilot, Shemenski used to fly his Pitts plane in loops or upside down. In 1984 it landed that way in the Portage River in front of his home.

"Needless to say, it didn't survive," said Shemenski.

Now he flies a Maule, a bush plane made of steel tubes covered with canvas, and keeps it upright.

KIDNAPPED

The South Pole wasn't his first experience with cold, polar regions either. He worked four stints in Alaska, including a season in Barrow, the northernmost town in the U.S. But the South Pole was colder, harsher and more remote. Winter in Barrow was like summer at the South Pole, Shemenski said.

Though he was the second doctor to be evacuated from the South Pole, Shemenski said the clinic facilities there are complete. The Pole clinic is set up to provide advanced cardiac and traumatic life support. The main thing lacking is surgical backup, Shemenski said.

"You can't cover everything," he said. "When you're there, you have to stabilize people for weeks. It took them three and a half weeks to get me out."

As a pilot, Shemenski was impressed when the Kenn Borek Air company Twin Otter landed at the South Pole on a pitch black, moonless night with the mercury at – 90 F (- 67 Celsius). But as a resident of the station he was disappointed.

"It used to be when that last plane left you were alone for the winter," Shemenski said. "That was part of the mystique. You were more remote even than the space station."

The successful flight permanently changed the South Pole, Shemenski said.

"Everybody realizes it's no longer eight months of no rescue," he said. "If they can fly in those conditions, then they can fly anytime."

Not that it was easy. Pole workers put in three weeks of work to prepare for the plane. The flight was delayed for three days in a row waiting for weather conditions to meet minimum requirements.

"I was hoping they wouldn't (be able to fly)," Shemenski said. "I was hoping they'd be stuck in Rothera and finally give up and go home."

When the flight finally took off for the Pole it went so smoothly it was anti-climatic, said Shemenski, who slept for most of the way back to Rothera, the British research station on the Antarctic Peninsula.

"They are really national heroes for the flight," Shemenski said.

Shemenski wants to go back to the South Pole or Palmer station, but realizes it is unlikely now that he has a history of heart problems. McMurdo Station, with up to 1,000 people, is just too big, he said. If he can't go to the Antarctic when his contract in Denver ends, he may return to the Arctic instead, returning to Barrow or Kotzebue.