

The Antarctic Sun

www.polar.org/antsun
December 17, 2000



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

Sweep dancing



Janitors (left to right) Barbara Clampet, Dee Miller, Michelle Wahnitz and Kayla Surginer practice a broom formation for the Mardi Gras parade while Jean Mather keeps time in the background. Photo by Kristan Hutchison Sabbatini

Quote of the week

"Here nobody has to go shopping, nobody has to pay any bills, nobody has to deal with the lawyer. Everybody works 54 hours a week and nobody complains."

- scientist at McMurdo

INSIDE

Creativity runs hot in Antarctica
page 5

Runway refresher
page 6

Adelies' enormous new neighbor
page 11

Lighter than air

Heavy on science

Engineer Randy Gould works on the instrumentation of the ATIC project.
Photo by Josh Landis.



By Josh Landis
Sun staff

Walking out of the glare of Williams Field and into the Long Duration Balloon barn feels like entering a Hollywood special-effects studio. The smell of wood and construction materials mingles with the whirl of high-powered computers. Engineers, technicians and scientists churn through dizzying displays of data. An air of quiet focus pervades. In the middle of it all, bathed by skylights, as if on a stage, is the

see **Iceberg** on page 4

News In BRIEF

Vostok evacuation

Two people suffering from high-altitude sickness were removed from the U.S. field camp at Vostok station. One developed High Altitude Pulmonary Edema (HAPE), a condition that can be fatal. The other had less severe symptoms. Both were brought to McMurdo Station to recover.

The U.S. camp is called "East," the translation of the Russian word "Vostok." It sits at 11,443 feet (3,488 meters) in elevation. Because of the thinness of the Antarctic atmosphere, however, it has a barometric pressure that is closer to 13,000 feet (3,962 meters). Camp population this season is expected to top 35 people.

East has been specially set up to deal with the possibility of altitude illness, said field support manager Steve Dunbar.

"We hired a paramedic trained to work at high altitudes," said Dunbar. "There's an ample supply of oxygen, two Gamov bags (portable hyperbaric chambers) and state-of-the-art medication to handle altitude sickness."

McMurdo's head doctor, Betty Carlisle, said those preparations made all the difference.

"They were two moderate cases that would have become serious, were it not for the excellent care up there," she said.

Upon returning to McMurdo Station, Carlisle said, both people's health returned to normal.

- Josh Landis

Library to reopen in new, old location

McMurdo's library is scheduled to reopen Tuesday with its full selection of books restored.

The hours, listed below, will not change. The library's entrance will be on the north side of building 155 between the laundry room and galley dock. From 8 to 9 p.m., Tuesday the recreation depart-

ment plans to serve food and beverages.

Last season, the library was moved to two bedrooms in Building 155 with a limited book selection. The old library room became the temporary dining room over the winter while the dining facility was renovated.

Building plans called for updating the old library, but were recently rescheduled to winter 2002, prompting the move back to the bigger site, where there is a lounge area with sofas and tables. Volunteers have been re-shelving the books.

Once the library is open, anyone who would like to volunteer can contact Reese Coffin, coffinr@mcmurdo.gov. Volunteers are needed during the day.

The library hours are:

Monday: 5-9 p.m.

Tuesday: 1-3 p.m. and 7-9 p.m.

Wednesday: 6-9 p.m.

Thursday and Friday: 7-9 p.m.

Saturday: closed

Sunday: 3-5 p.m. and 6-8 p.m.

- Beth Minneci

Galley chief is gone

Executive chef Jody Cheever resigned and will not be replaced until sometime after summer.

Cheever left Thursday for his home in Las Vegas.

Until a replacement is hired, food, beverage and retail manager Lester Bracey and station services general manager Bob Tellez will take over Cheever's duties.

- Beth Minneci



Signs of summer

The blustery storms that turned November into a record-snowfall month have subsided, as the sun melts the streets and hills around McMurdo.

Photo by Josh Landis.

The Sun's Annual creative writing festival

Poetry (Maximum length 30 lines.)

Fiction (Maximum length 500 words.)

Finish this story...
(Maximum length 500 words. Scenario available at the Sun office.)

Entry deadline: 6 p.m. Dec. 24
Enter via e-mail to AntSun@polar.org, or at the Sun office in McMurdo's Building 155.

LETTERS to the editor

Survival tips from a chaplain



Between Thanksgiving and the New Year, we may find ourselves on an emotional roller-coaster. This “best of times” and “worst of times” response is normal during the holidays, especially when separation, distance and limited communication with family members are included. The following tips can assist each of us in surviving these holidays in a positive manner, and enable us to have a joyous season.

Communication

Write, e-mail, and call home and significant others often. Whether this is here in McMurdo, Montana, or Malaysia, we need to be more expressive during the holidays. With this expressiveness, we need to add listening to others. Listening to how something is said is as important as listening to what is said. A great gift to give to others this holiday season is “both” ears to their conversation.

Celebration

Plan now to celebrate these holidays as normally as possible. Use the resources available to provide yourself and others a holiday experience that is as much like home as possible. Get a group together, whether it’s your work group, your friends, your faith group, or an event with the community as a whole and celebrate the holidays. Planning and preparing for holidays are as important as the celebrations themselves.

Moderation

This is not to throw a wet blanket on the celebrations, it is a reminder that we are all dependent on each other here on the Ice. Anyone whose excessive behavior becomes the norm and not the exception dampens others’ ability to enjoy their holidays. If I cannot meet my responsibilities then someone else has to do his or her job and mine. That is the real wet blanket during the holiday season.

Consideration

Be each other’s keeper; we need to care. We need to listen, watch and watch out for each other. We need to be preventive. We need to become proactive and get involved when someone is having a difficult time and see it through. We need to have the courage to make referrals.

If we are having a difficult time making it through the holidays, we need to seek help. This is not a sign of weakness but strength. The help will be confidential and can be provided by either of the chaplains or the counselor here on station.

- Chaplain Art Moore

web sites of the week



- <http://bat.phys.unsw.edu.au/~aasto/>
A look at the South Pole.
- http://plato2.bro.lsu.edu/aticweb/Webcam_DMON3/webcam/index.htm
Live shot of the long-duration balloon hangar at Williams Field.
- <http://www.skywatcher.com/cam.htm>
McMurdo Station on camera, live, all the time.

the week in weather

around Antarctica

McMurdo Station

High: 39F/4C
Low: 10F/-12C
Windchill: -6F/-21C
Wind: 13 mph/20 kph

Palmer Station (Saturday)

High: 45F/7C
Low: 28F/-2C
Average: 34F/1C
Wind: 46 mph/74 kph

South Pole Station

High: -13F/-25C
Low: -20F/-29C
Avg. temp: -18F/-28C
Wind: 25 mph/40 kph

around the world

Saturday's numbers

Menomonie, Wis.

High: 25F/-4C
Low: 7F/-14C
Palestine, Texas
High: 60F/16C
Low: 22F/-6C

Havana, Cuba

High: 84F/29C
Low: 70F/21C
Edinburgh
High: 38F/3C
Low: 27F/-3C

The Antarctic Sun, part of the United States Antarctic Program, is funded by the National Science Foundation.



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.

Publisher: Valerie Carroll, Communications manager, Raytheon Polar Services

Senior Editor: Josh Landis

Editors: Beth Minnecci
Kristan Hutchison Sabbatini

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

From page 1

group's center of attention.

The contraption looks like a space station model or science-fiction movie prop. A white, tubular exoskeleton nearly 20 feet tall supports a bird's nest of wires, sensors and electronics. But this contraption is not for show. It is one of two multi-million dollar instruments ready to tune into a tiny sliver of the universe's energy, and it will travel to the edge of space.

The Advanced Thin Ionization Calorimeter (ATIC) will soon ascend more than 20 miles into the sky, hanging under an enormous balloon. ATIC will then set its sights on what it was made to monitor: cosmic rays. These nuclei of atoms travel at speeds close to the speed of light, are about 12 million years old and are the only bits of matter that reach us from distant regions of the galaxy, and maybe other parts of the universe. The ATIC experiment will help clue scientists into how supernovas cause these high energy particles to move through space and explain other space phenomena.

But ATIC isn't the only cosmic game in town. Next door, in a different building, is the season's main balloon experiment called TopHat, more formally known as The Optimally Positioned Half-Degree Anisotropy Telescope. This instrument is focused on the happenings even deeper in space. It's designed to collect data on the Cosmic Microwave Background Radiation.

The term sounds intimidating, but the theory isn't hard to grasp. CMBR consists of waves of energy that were released when the universe formed. It is traveling through the universe in all directions, at all times. The portion of the CMBR that TopHat will examine dates back approximately 12 billion years. Ultimately the waves will help further develop the Big Bang theory, shed light on what happened in the first moments after the universe was "born," how it's evolved, and how it could change in the future.

The experiment includes a spinning telescope and a detector system that rides on top of the balloon, rather than hanging beneath it. It will map a sector of the sky above the polar cap. TopHat will spin at a constant rate as it floats above Antarctica and record continuous data on CMBR.

As advanced as these instruments are, they wouldn't be able to see a thing without the help of helium-filled balloons. The National Scientific Balloon Facility was established in 1961 under the National Science Foundation. Since then it's moved under NASA's auspices, but still works closely with the NSF for Antarctic launches.

These massive vehicles achieve an altitude that puts them just shy of being spacecraft.

"We're the cheap seats to space," said Long Duration Balloon (LDB) project manager Steve Peterzen. He said a 24-day balloon mission can be set up and executed in as little as six months for a cost of one million dollars. In contrast, a trip aboard the Space Shuttle would take years to plan, be more than 10 times as expensive, and have fewer days at altitude.

The largest balloons can fly as high as 140,000 feet (42,672 meters) and expand to nearly 40 million cubic feet (1,132,673 cubic meters) in volume. A balloon that size could "contain two 747 airplanes nose-to-nose with room to spare," said balloon engineer Derek Dolbey.

During the separate ATIC and TopHat flights, the balloons will rise to about 120,000 feet (36,576 meters) and stay afloat for two weeks or more, until the payload is cut loose from the balloon with an explosive charge. It will then fall to the Earth at speeds approaching 700 miles per hour before being gently lowered to the ice by parachute. After that the team will travel by airplane or helicopter to retrieve the instrument.

Peterzen said larger balloons and payloads could be launched here if not for the limitations of the launch vehicle. The old retrofitted Delta used to suspend the payload before lift-off can only handle about 2,000 pounds (907 kilograms).

Before the launch can even be considered however, the atmospheric conditions must be just right. A circular, counter-clockwise wind current over the continent must be present. This pattern will ideally carry the balloon from Williams Field, around the continent, and return it (ideally) to within a few hundred miles of McMurdo. It's a meteorological phenomenon that makes these projects possible, because the balloon's path can be predicted. The winds at lower altitudes need to be nearly still, too. Even a gentle breeze would wreak havoc on millions of square feet of balloon material.

"We like to keep the winds under six knots (7 miles per hour) constant," said Peterzen. "The balloon is a huge sail."

Even with the balloon partially extended, a gentle breeze could drag the vessel, payload and launch vehicle across the ice with disastrous results.

So far this season, all the pieces are falling into place. A "pathfinder" balloon went up just over a week ago, and it's showing ideal conditions for the first release. A tracker is available on the internet through the facility's website at <http://tower.nsbfn.nasa.gov/>.

"The software is working, the weather looks good, the winds have set up and we're hoping for a Monday launch," said Greg Guzik, ATIC project coordinator.



Top: Greg Guzik inspects the ATIC instrument in the long duration balloon barn at Williams Field. A massive balloon will carry it more than 120,000 feet into the sky, where it will detect cosmic rays.

Bottom: The two staging workshops for balloon projects rest in a depression in the snow at Williams Field. Photos by Josh Landis.

Antarctica

■ sparse land and life inspire artists

Story and photos by Kristan Hutchison Sabbatini
Sun staff

In dim dorm rooms and dirty shops, cooks, welders, and other workers are making art.

About 40 artists and craftsmen will show their work at the 15th annual Ross Island Art Show from 1:30 to 4:30 p.m. today in the cafeteria.

Antarctica presents unique challenges for artists. At home in Vermont, Elaine Parker paints in a full studio on large canvases. In Antarctica she sticks to paper and pencil, sitting on the edge of her bed as she props the drawing on her knee.

She's tried sketching outside, "but it's ridiculous because it's too cold," she said. "I have actually had the wind blow a pencil out of my hand and tear the paper right off the pad."

Instead she works mostly from photographs and memory, using journal notes to remind her of the feeling and colors of a particular scene.

Parker doesn't mind giving up her paints for a few months though.

"There's something about Antarctica that lends itself to black and white," she said. "The rock is black and so are the shadows and the sky is light."

Parker's as much inspired by her coworkers in the kitchen as by the landscape outside.

"There's an incredible beauty in the workforce here," said Parker, who wants to return through an Antarctica Artists and Writers Grant to draw portraits of workers. "To me, that's the untold story."

Parker knew to pack her sketch pads and graphite pencils because this is her third season, but Justin Gibbens and Renee Adams left their art supplies behind when they packed for their first trip to the Ice.

"I didn't know how much time I'd have to make art, how much energy I'd have after a 54-hour work week," said Gibbens, a janitor.

Once here, he discovered the inspiration of the landscape often overshadowed his exhaustion.

"The landscape here is really intriguing," Gibbens said.



Production Cook and artist Elaine Parker finishes a pencil sketch of the South Pole in her bedroom.

"We forgo the bar scene and do art."

Gibbens scrounged together watercolor paper, pencils, pens and whiteout from recycling bins to work with. His parents are sending a care package full of art supplies.

For the art show, Gibbens and Adams worked with typical Antarctic motifs - penguins, icebergs, seals and Antarctic cod. But Gibbens added quirky twists, like levitating penguins.

"It's sort of wildlife art with an edge, a different sort of slant," Gibbens said.

Adams admits that one of the reasons to feature penguins in her crisp ink washes is the birds' near-icon status, but she also enjoys drawing the birds.

"Sometimes they're humorous, but sometimes they can be really elegant," Adams said. "It's easy to put a mood with them. To me, they're somehow representative of the landscape, the sharp contrast."

The limitations of life in Antarctica as much as the landscape drive other artists. Rick Miller expected to continue his abstract painting in Antarctica, but the box of acrylic paints he sent never arrived. Instead he turned to the materials on hand in the heavy metal shop where he works, welding steel into abstract sculpture.

Miller pulls his materials, and his inspiration, from the waste metal bins. He was cutting notches in a pipe when he noticed how the triangular scraps contrasted with long, thin slices he'd cut off.

"That reminded me of a kind of line quality I make when I'm doodling," said Miller, who welded the pieces together into a rough cross shape for the art show.

Using scraps limits what Miller can do, but he finds scarcity forces creativity.

"I've discovered over the years that when you have all the wealth of materials, sometimes you're stifled," said Miller.

The isolation of Antarctica drives Alexis Lassman to draw and paint. Without the distractions of television in her room or easy access to drugs, she channels her tension into her art.

"It's a release for me. I do get really down and frustrated and anxiety ridden," Lassman said. "Art is something to just completely lose myself in, just like meditation, where I don't have to think for a while."

Lassman said her art comes from within, from the dark and dreamy recesses of her imagination. In a watercolor she worked on for a month, two partial nudes stand in tortured positions, their skin like stained glass from the overwashes of greenish color. The art is so personal Lassman never sells it, but will be selling handcrafted silver jewelry she designed her first season in Antarctica at the art show.

"I never do landscapes or anything that reflects the environment of this place, but it reflects the starkness and the rawness," Lassman said, intently sketching in the craft room. "It makes you kind of mental and that's good for art."



Metal worker and artist Rick Miller cuts scrap metal (above) and then arranges it into a sculpture (left).



Pegasus Ice runway at Winfly. Photo courtesy of Bill Haals.

There's potential at Pegasus

By Beth Minneci
Sun staff

On the clearest days, from Scott Base one can spot a small speck south across the ice shelf. It's Pegasus Ice runway.

Runways are central to our lives.

We look to them for letters and packages from home and for fresh food to put on our plates. Runways are the turning point and a pit stop for people and cargo between McMurdo Station, the South Pole and field camps. They are like a vantage point - the platform from which we form our first and last impressions of Antarctica. To some of us, runways are a workplace and a second home.

Eighteen miles away, Pegasus is the farthest and least-used of McMurdo Station's three frozen airstrips.

This year scientists are studying whether it is feasible to open Pegasus a month sooner, in December, when the sea ice runway is closed and the U.S. Antarctic Program consequently is forced to trim cargo and passenger loads.

Extending Pegasus' life just a few weeks would entail a lot of preparation but could provide a worthwhile return - up to 25 extra flights a season, said George Blaisdell, an engineer leading the Pegasus study.

"Consider the length of a season," Blaisdell said. "The program believes it's not too much effort to do this."

The goal is to make wheeled plane landings safe on Pegasus during December and January, two months in

see Pegasus on next page

Three runways' lives

Built on either snow or ice, the life spans and limitations of McMurdo Station's three runways are largely determined by the type of ice on which they are built, the amount of snow that drifts or falls on them, and the degree to which the heat penetrates the surfaces.

In mid-August, a few Winfly flights land on Pegasus Ice runway with crews that build the sea ice runway, the main airfield from October to December.

On the sea ice, the saltwater freezes in a manner that segregates the salt into brine pockets, which melt first and make potholes. Because exposure to the sun weakens the ice, during sea ice operations, crews are careful to keep a thin layer of snow on the ice in an effort to reflect the sun's harmful rays. Too much snow is bad because it acts as an insulator early in the season from cold air temperatures, which drive ice thickness growth. Later, thick snow traps heat, which melts the ice.

During the weeks leading to December, while the temperature is getting warmer, the ice is getting thicker. At about five months, the lag time in which

see Three on next page

Runway exchange

USAP looking for alternate landing site

In addition to expanding Pegasus runway's use, scientists and U.S. Antarctic Program management are considering an emergency runway that could serve as a rest-stop for LC-130 aircraft that pass the point of safe return.

Odell Glacier is 124 miles (200 kilometers) north of McMurdo Station. This is the first site to be considered as an alternate, emergency, runway, said U.S. Air National Guard Col. Richard Saburro. The Guard routinely designates emergency runways wherever it flies.

Last season a plane was forced to land on Odell Glacier without any preparation when it hit bad weather past the point of safe return, the position at which a plane still has enough fuel for a round-trip. The crew, the plane's only passengers, waited 24 hours before a plane from McMurdo Station could bring them fuel.

"So we have already demonstrated that there is a use for the runway," Saburro said.

Odell Glacier was picked for its location and makeup, Saburro said. It is near the flight path between McMurdo, Christchurch and the South Pole. The site lies in a different weather pattern area than the sea ice runway, Pegasus Ice run-

way and Williams Field, McMurdo's current runways. Usually, the weather at Odell Glacier is clearer than at McMurdo, Saburro said.

Finally, Odell is a blue ice glacier, relatively smooth and is thick. The site would require little preparation before it can be used as a runway, added engineer and scientist George Blaisdell.

"This one appears to have the right features," said Blaisdell.

Blaisdell recently camped at Odell, and analyzed surface roughness and weather characteristics at the site. The Antarctic Program will review the data, and make a decision about the preparations, and under what circumstances it would be used.

Blaisdell, who is an engineer with Hanover, N.H.-based Cold Regions Research and Engineering Laboratory (CRREL), part of the U.S. Army Corps of Engineers, has been working with projects in Antarctica since 1989. He was part of the team that built Pegasus, which opened in 1993.



- Beth Minneci

Pegasus from previous page

which the runway is closed, and when the sea ice runway - the main strip of the season - is dismantled.

By each December, the sun has usually damaged the sea ice surface to a degree that it is not worth maintaining anymore, so the program pulls the two dozen or so buildings that service the airfield to Williams Field, a snowy skiway seven miles away. Last Saturday, fleet operators finished the bulk of that move. The sea ice closed Wednesday.

The switch to Williams Field marks mid-summer, and a time when the program's cargo and passenger flights slow down. This happens because Williams

Field is only able to handle aircraft with skis, and most skied planes are smaller than wheeled planes.

Pegasus, on the other hand, can handle the wheels during most months, and is being targeted to one day take over after the sea ice is closed.

To make a summer snow layer on Pegasus that will support wheeled landings, Blaisdell and crews have been packing with 50-ton roller machines several inches of snow. The experiment is taking place in December and January.

Packing snow may not sound scientific. But finding the formula for compaction that will support planes weighing

up to 155,000 pounds with cargo is a delicate balance of, among other things, temperature and tire pressure on the snow. Yesterday a wheeled taxi test was scheduled with an LC-130. More flights are planned each week until late January.

Opening Pegasus immediately after the sea ice runway closes would not only boost cargo and passenger transportation between McMurdo and Christchurch, the ability to use wheeled planes would free up the program's ski planes for intra-continent use, said airfield manager Gary Cardullo.

"It's going to allow us to do more missions here on the continent," Cardullo said.

Three from previous page

the sea responds to temperature change is much slower than the air's quick response.

By mid-summer, the sea ice is 8 to 10 feet thick, but the warm sun has usually damaged the surface with soft spots.

Under snowy Williams Field, the ice is covered by so much snow - at least 25 feet - that it is not considered an ice runway. The integrity of the ice's surface is not an issue here.

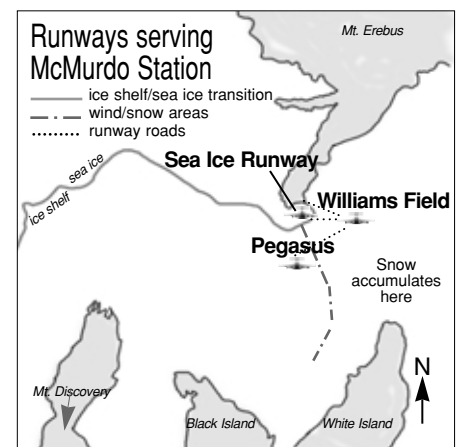
While Pegasus is closed, mid-November to late January, management pays close attention to protecting the ice runway from the sun by covering it with a blanket of snow. Fleet operators try to maintain about a 7-inch snow layer.

The mid-season snow-spread is too fluffy and loose to support wheeled plane landings. Each January, the operators strip the snow layer, leaving the ice bare, on which wheeled planes can land.



As part of an experiment, engineer George Blaisdell and a crew are packing the snow-cover at Pegasus, aiming to make a base that is sturdy enough to resist the sun's rays and support wheeled landings during the month of December.

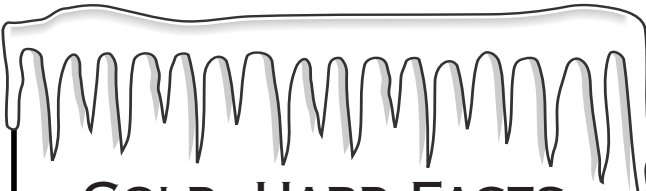
The goal is to open Pegasus to wheeled C-130 aircraft immediately after the sea ice runway closes.

- Beth Minneci



our Antarctic week

<p>17</p> <p>15th Annual Ross Island Art Show, 1:30 p.m. to 4:30 p.m., galley</p>	<p>17</p> <p>"National Lampoon's Christmas Vacation," 8 p.m., Coffee House</p>	<p>17</p> <p>Science Lecture "Climate in Antarctica," by Stephen Warren, 8:15 p.m., galley</p>
<p>18</p> <p>"How the Grinch Stole Christmas," and "It's a Wonderful Life," 8 p.m., galley</p>		<p>19</p> <p>Library grand re-opening with refreshments 8 to 9 p.m.</p>
	<p>19</p> <p>Seuss-a-Palooza revisited, video showing of Dec. 3 event, 8 p.m., Coffee House</p>	<p>20</p> <p>Birthday Bingo, free cake with proof of birthday, 8 p.m. Gallaghers.</p>
<p>www.polar.org/antsun</p>		



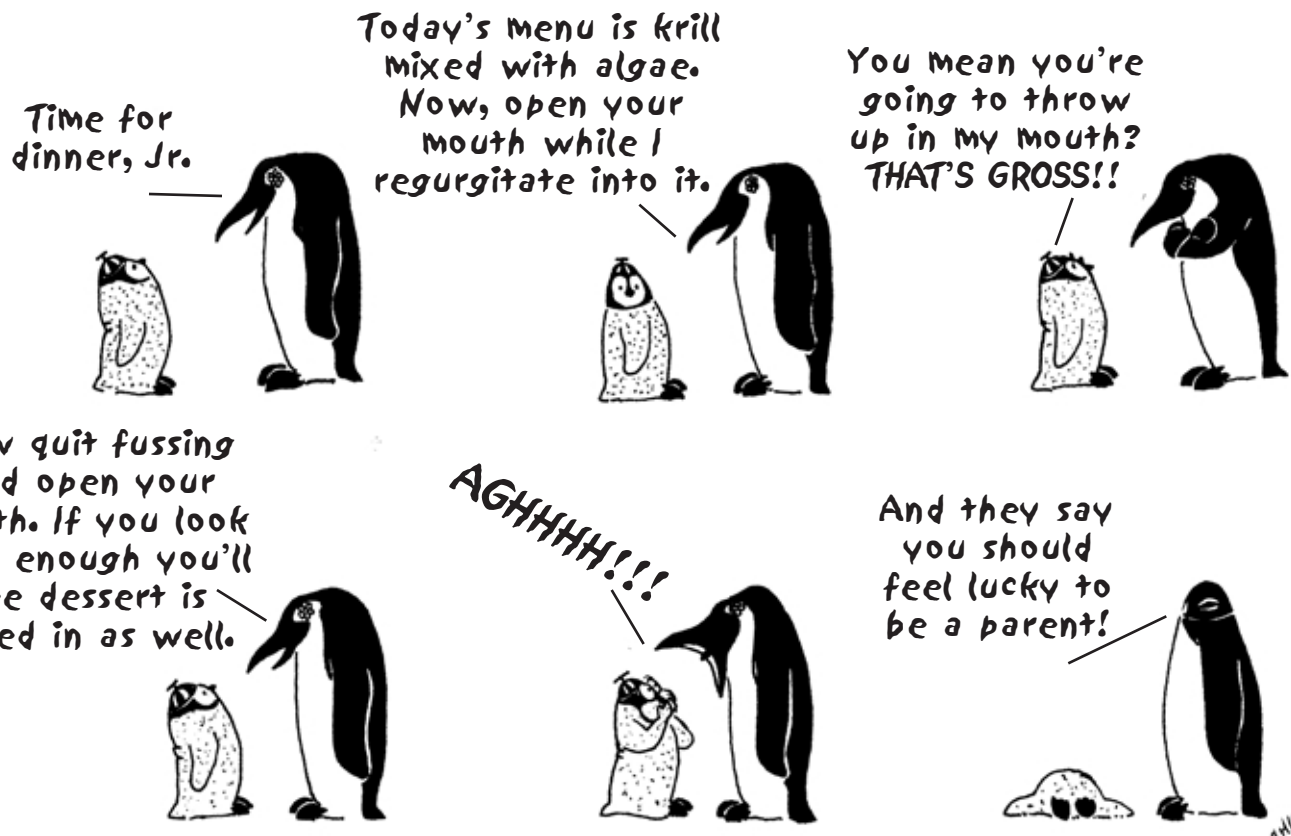
COLD, HARD FACTS

Waste reused

- Average number of items thrown out by one department and reused by another each month: **10**
- Percent of all waste reused: **24**
- Percent of solid waste reused: **7**
- Percent of hazardous waste reused: **45**
- Pounds of waste fuel and oil burnt in two waste oil furnaces: **315,970**
- Buildings heated by waste oil: **5**
- Number of vehicles in the orange fleet to be barged north for auction this year: **71**
- Age of the vehicles: **15 years**
- Other items from Antarctica to be sold: **Airplane parts, commercial stoves, serving buffet, bathroom stalls, electric parts**
- Item deemed not worth shipping and selling: **Metal lockers**
- Destination for truckload of soap leaving McMurdo last year: **Latvia**

Ross Island Chronicles

By Chico



Time for dinner, Jr.

Today's menu is krill mixed with algae. Now, open your mouth while I regurgitate into it.

You mean you're going to throw up in my mouth? THAT'S GROSS!!

Now quit fussing and open your mouth. If you look hard enough you'll see dessert is mixed in as well.

AGHHHH!!

And they say you should feel lucky to be a parent!

chico

UNINCORPORATED McMurdo



If McMurdo Station were a town instead of a company town, the out-of-bounds sites would be unannexed McMurdo County. This sketch doesn't include all of the huts and antennas in unincorporated McMurdo, just the most high profile places.

- A** Being moved with platform and shack, building 70, about 600 down the hill. Plans include antennas for the platforms. NASA's new link to TDRS satellite will be here.
- B** Backup receiver antennas in case MacRelay loses communication with Black Island, the program's site for receivers.
- C** The United States Antarctic Program's main runway mid-December until February. Approximately 45 people work at the airfield, where there are 27 buildings.
- D** NSF-owned. Inside, a 33-foot diameter satellite dish tracks, among other things, RadarSat satellite orbiting for ice-penetrating radar in Antarctica.
- E** Twenty antennas. Thirteen high frequency transmitters inside residential building. Handles communications for South Pole, field camps, flights and ships. Residential building has three bedrooms, one bathroom, pool table and weight room; is scheduled to be razed this year and replaced with remotely controlled site.
- F** Fifty-one trucks and 20 vans will leave with the Greenwave, a cargo ship, expected to arrive in February.
- G** Where explosives engineers get their charges. About 10,000 pounds of explosives are stored in magazines, buildings set apart from town in case of a boom.
- H** One building is empty, one is used for storage. One used to be a nuclear power generator. The other was the water plant.
- I** Home to Cosmic Rays experiment, which measures high-energy particles in deep space, balloon tracking and communication with Williams Field. Wooden building was once a place where people could stay in case of bad weather.

Answers: 1.D; 2.B; 3.F; 4.G; 5.H; 6.A; 7.E; 8.C; 9.I

ITASE



A member of ITASE loads boxes on top of the ice core freezer, the first component of the train. The next building in the convoy is the bunk house, followed by the kitchen. Photo by Bob Zook.

Science traverse treks along

By Josh Landis
Sun staff

The International Trans-Antarctic Scientific Expedition (ITASE) is making progress on the West Antarctic Ice Sheet. The traverse team has gathered almost 656 feet (200 meters) of ice cores and continues to collect samples. The multi-disciplinary effort will teach scientists more about climate changes in Antarctica over the last 200 years.

The going is tough, though. The sampling sites are approximately 62 miles (100 kilometers) apart and take 15-18 hours of non-stop driving to reach. Once there, the team spends two to three days digging snow pits, gathering samples and collecting cores.

This year's traverse also received fuel air drops. The Air National Guard sent

pallets of fuel drums attached to parachutes out of LC-130 aircraft at precise locations. The fuel was within feet of where it was supposed to be, but because mechanical problems delayed the group's progress, side trips were required. Bob Zook and Steve Niles went on a retrieval mission that took them three days and 168 miles (270 kilometers) round trip from their camp.

"It took eight hours for the two of us to dig the parachutes and 16 fuel drums out and load them up. At 375 pounds each, it was a long day," Zook said. After all the hauling and traveling he found himself with a new appreciation for the seemingly monotonous landscape: "This place is by no means flat."

In addition to the suite of research that takes place at each stop, the team also set up several automatic weather stations. These instruments are expected to work throughout the winter, providing data that's never been recorded before.

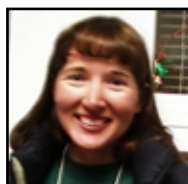
The traverse ran into problems early on when their Tucker Sno-Cat, used to pull part of the load, broke down. A cracked engine block put it fully out of commission, but another heavy vehicle took its place.

ITASE is scheduled to finish this season's work by early January. They plan to be back next season for another traverse on the West Antarctic Ice Sheet.

More information is available at the website: www.secretsoftheice.org.

Highway ^{to} one

What would you like for the holidays?



"A case of diet Dr. Pepper. This is diet Coke and I'm sick of diet Coke."
M.K. Fortune
Firefighter paramedic

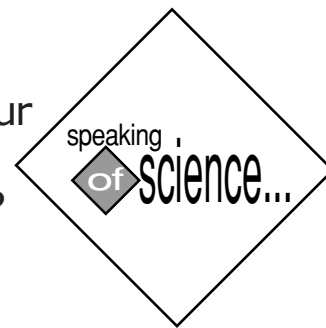


"A nice big log fire in a cabin and a little wine."
Patrick Stevens
Pipefitter for FEMC



"Just happiness really. I just want to be happy."
Rudy Dominguez
Electrician

What if you found a large iceberg in your back yard?



By David Ainley
Special to the Sun

The powers that be in the United States and New Zealand Antarctic Programs have been tracking several very large icebergs that are making their way across the Ross Sea. These bergs separated from the eastern portion of the Ross Ice Shelf last fall near the Bay of Whales. They equal in size Rhode Island and Delaware. Two are twice the size of Ross Island. A while

HOW DO YOU SUPPOSE ADELIE PENGUINS WILL HANDLE IT?

back, they made a big splash briefly in the news with stories on CNN and in *Time* magazine. The bergs can be "watched" in satellite imagery to track ocean currents. Now, people are still watching them out of curiosity, but also because should they float far enough west to block McMurdo Sound, they would impact USAP ship operations and, ultimately, USAP itself. Not too likely.

One berg – a "small" one, about a quarter the size of Ross Island – is now nestled against the north shore of Ross Island, west of Cape Crozier. It has been there for the past six weeks or so; and it must be grounded. This iceberg, known as C-16, occupies about a quarter of the usual foraging area of the Adelie Penguin colony at Cape Crozier. It does not block entrance to the colony by the penguins. This colony, at about 140,000 breeding pairs, is one of the largest for this species anywhere. Therefore, we Adelie Penguin enthusiasts are watching this berg and the others with as much interest as anyone. How the penguins cope with the bergs will reveal some secrets of their natural history that otherwise we would never learn. It's a golden (frosty?) opportunity, as they say.

During the past four summers, we have been assessing the size and overlap of the foraging areas of the Adelie Penguin colonies at Cape Royds (5,000 pairs), Cape Bird (38,000 pairs), and Cape Crozier on Ross Island, as well as that on Beaufort Island (35,000 pairs). We do this by affixing tiny radio trans-

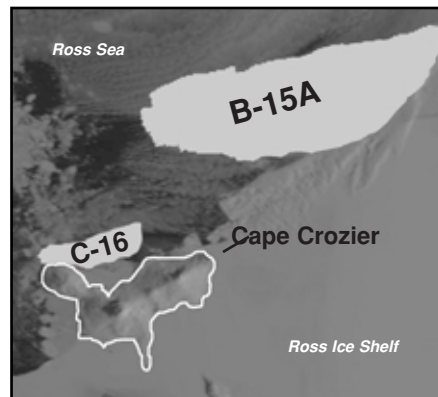


Image courtesy of the
Antarctic Meteorological Research Center,
Space Science and Engineering Center,
University of Wisconsin-Madison

mitters to the backs of penguins using special black tape. That way we can remove the radios for reuse without harming the insulating coat of feathers. The radios are streamlined to minimize drag through the water. The radios, in fact, are just 1 percent of the cross-section of the penguin, thus they do not affect their swimming at all. We then spend a good deal of time at higher elevations, with directional antenna in hand, obtaining fixes of the penguins' location as they forage. Where the compass directions from two listening posts cross, the radio and the penguin are located. The radios have a range of about 40 miles (64 kilometers).

We have found in this aspect of our research that the foraging area of the large Crozier colony does not overlap that of any of the other colonies. In contrast, the respective foraging areas of the smaller Royds, Bird, and Beaufort colonies overlap each other by 30-50 percent. Of special interest is the fact that the Crozier penguins forage to the west of Crozier all the way to the eastern shores of Beaufort Island, 50 miles away. One would think that the Beaufort penguins would just as easily forage on either side of their island, but they don't. They forage only to the west, thus avoiding the area where the Crozier

birds find their food. What this indicates to us is that the density of birds foraging from Cape Crozier is so high that penguins from the other colonies prefer to forage elsewhere. It's sort of like the scene at your local grocery store: when it is busy, no doubt you head for the shortest check-out line. In eco-talk, what is happening here is called interference competition. There is plenty of food, but access to it is compromised with too many elbows (or flippers) in the way. Combined, the entire foraging area of the Royds, Bird, and Beaufort colonies is about the same size as that of Crozier, yet there are only about half the number of penguins using it (280,000 Crozier birds vs. 156,000 from Royds-Bird-Beaufort). Therefore, the foraging density of the Royds-Bird-Beaufort colonies has not reached the point where interference competition is a problem.

Well, along comes this iceberg that is occupying a large part of the Crozier foraging area. What is going to happen? We don't know, but do have some guesses. It is possible that the Crozier birds are already foraging about as far away from their colony as they possibly can. If so, then the iceberg is going to crowd them even more. In that case, we should see a fall off in the amount of food they bring back to their chicks, or it might take longer for them to find food having to avoid one another more than usual. Their chicks will grow more slowly than usual. Or, maybe they have not been foraging as they can. These penguins are really amazing swimmers, to be sure. If the iceberg does crimp their style, by reducing the size of their foraging area, this will tell us that the size of a penguin colony is dependent to a great extent on the amount of foraging habitat available. That is an important bit of information in our effort to understand the factors that regulate penguin populations or cause them to increase or decrease in size. Indeed, we will be observing this situation closely.

David Ainley is a marine ecologist specializing in penguins.



Profile

Morris "Mo" Moore, left, and Kevin Swift secure oil barrels on a pallet. The fuel will be dropped with a parachute from an airplane.



Mo better barrels and blues

Moore, circled, with The Incredible Rock City Band, circa 1987.

By Beth Minneci
Sun staff

The pub crowd grows thin but loud at closing. In a corner, Morris "Mo" Moore blows into a shiny harmonica, producing a rich sound that turns heads. He smiles, then kicks into a smooth blues tune that draws a small but worshipping audience.

In 60 days, Morris "Mo" Moore has become a McMurdo Station fixture at night, when he swaps his green military fatigues for tailored black clothes fit for the Chicago blues circuit. He's known around town for his flashy clothes, frequent melodic outbursts and spirited personality.

"He's a lively cat showing his individuality," said Southern Exposure bartender Bill Thompson. "He just wants everyone to have a good time."

During the 10 years before he joined the Air National Guard, Moore made a living making music. He changed his life when he took a part-time job with the Guard. Now, instead of traveling with The Incredible Rock City Band out of Little Rock, Ark., he's entertaining solo, around the world, in bars and on couches after hours.

As a teenager in Little Rock, Moore's first instruments were drums in marching band. He liked showing off on stage, so later expanded his abilities to include synthesizer and harmonica.

"I used to be a shy person, but once I hit the stage I was good to go. I like to dance out front and clown."

Moore is thin and wiry, gesturing as he uses an emphatic tone of voice. He won't tell his age, but that the Rock City Band was formed after high school, at least 23 years ago.

Brushes with fame include opening a show for the Ohio Players.

In 1986, the switch from stage to military life wasn't such a departure because the

Rock City Band played mostly at military bases, where the band's equipment was safe overnight. The group traveled in two vans throughout the central and southeastern United States.

"It was a way to get known and see the country and you know that you are safe," he said. "I was getting paid for having fun."

When it came time for a change, Moore joined the Guard for excitement, education and travel. "Everything the commercial says, I guess."

At the Little Rock Air Force base, he trained as a cargo and parachute rigger four years after basic training.

The cargo dropped from planes can be tanks, ambulances, rubber rafts, jeeps, ammunition or people. The drops are done to avoid a risk, such as landing in a jungle or in gunfire or, in this case, in a crevasse or on a snowy surface, said Guard supervisor Tim Driver.

The bigger the load, the larger the parachute. Large loads fall with four or five chutes.

As for adventure, the Air National Guard has sent Moore to Guam, Italy, Germany, Korea and New Finland. In mid-October, he landed in Antarctica. His friends at home laughed at the news. "They know I hate the cold."

Moore left for home yesterday, but had concluded that the temperature wasn't so bad, and that he would like to return. Next time, however, he'll bring a pair of snazzy cowboy boots, normally a wardrobe staple — alligator, ostrich, bull-hide, lizard and faux baby leopard. "I've got some crazy skins."

Leaving the boots behind wasn't an effort to dress conservatively; he just couldn't fathom the place where he was going.

"I didn't know what to expect." Now he does.

Moore speaks positively about the last two months.

"I've pretty much been meeting people all my life, I'd say this is the most concentrated group of people where I can say everyone is nice and beautiful people."

Moore and Guard friends Kevin Smith of Arkansas and Ken Villeret of Mississippi take pride in having broken a social barrier that exists between military and civilian people, Swift said.

"When we first got here, me and Mo talked about it," said Smith. At the bars and at parties the men introduced themselves to people. "We said, 'Hey, we're here to do a job just like you guys are.'"

It worked.

"That's just us," Moore said. "We're just down-home country gentlemen."

Moore compliments the people in McMurdo's cargo operations. "They do a real good job here. I've got to give it to them."

His unit's last project was building and packing 60 1,500-pound fuel drum loads and as many parachutes.

Working with the Air National Guard part-time leaves several months of the year free for playing music.

When he gets home, The Incredible Rock City Band will have a new name, but the players will be the same. What is now The Billy Jones Show and Revue plays more blues than disco, and has moved 150 miles from Little Rock to Memphis.

Some weeks Moore drives three nights to Memphis. But the touring has stopped.

"We're at the point now where those days are gone, but we could write a book, I am serious." Moore clasps his hands and looks skyward, laughing.

About the old days, he's nostalgic, but not melancholy. To explain, he quotes a song that paraphrases Shakespeare.

"The whole world's a stage, everybody's playing a part. I just left one stage and went to the next."