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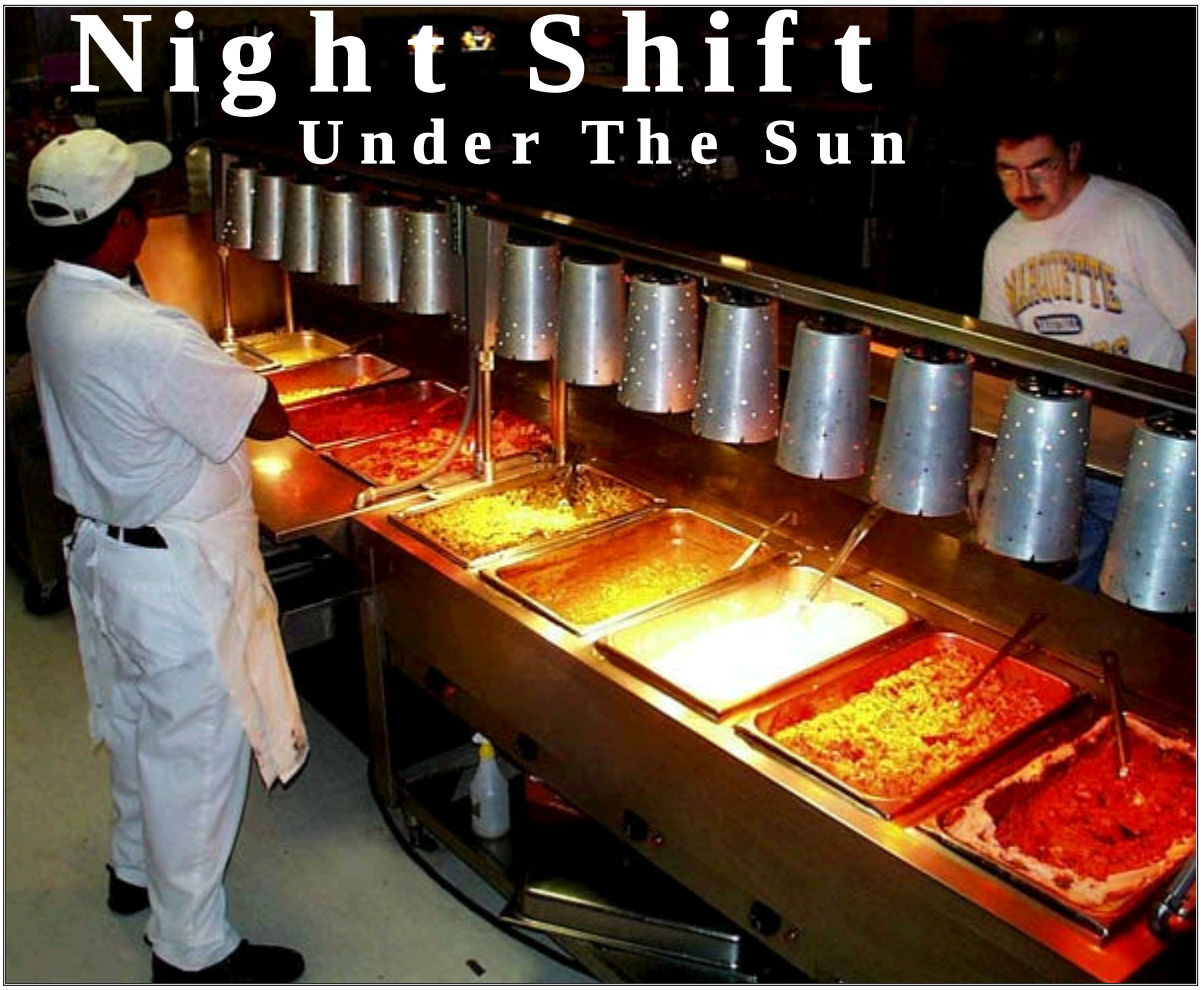
Night Shift Under The Sun



12:39 a.m.

Tony Middlebrooks, left, keeps a watchful eye on his 'midrats'dinner line. "I work better at night," said Middlebrooks. "It's quiet with less people and more personalized."

Inside the graveyard shift Nov. 27-28. 200 Workers keep McMurdo hopping under the midnight sun.

Story and photos by Alexander Colhoun

It is 3 a.m. in McMurdo and the sun casts shadows over the volcanic pumice that seems to stretch for miles. An eerie, ghost-like silence has settled between the brown and green buildings. In the distance, the lonely groan of a single diesel engine slowly rises and falls as it passes ear shot. Lurking below this surface, however, is a honeycomb of activity that never ceases buzzing.

This is the night shift, under the Antarctic sun.

"These are the night crawlers, the nobodies," said Dale Randolph, night manager of the heavy shop, of his 11-man shift. "It's quiet, little politics, excellent crew. Yeah, we're a little on the introverted side, all of us. I guess we just like to work alone."

Isolated in pockets across the station, a skeleton crew of nearly 200 people keeps McMurdo Station ticking 24 hours a day. Unseen and often forgotten, night-shift workers are stage hands behind the master show. They are cargo handlers and steel workers, cooks and communications experts, janitors and mechanics, and it is their work that allows the regular working day to proceed without a hitch.

Seated at the heart of the night shift, surrounded by a wall of switches, speakers and handsets, is Annie Lowery, a MACOPS radio operator. Monitoring three channels of High Frequency radio calls from 6 p.m. to 6 a.m., Lowery has her finger on the heartbeat of Antarctica. Throughout the night she fields calls from as far away as the South Pole and Siple Dome, many of which have direct bearing on the following day's schedule in McMurdo. "We're taking

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INSIDE

One Tough Tank Team Tackles Dangerous Job

Story and photo by Alexander Colhoun

Four-inch-wide steel beams span a 30-foot chasm of empty air. Like spiders stringing a web, workers trace effortlessly across the beams as sheets of steel swing precariously above them in the breeze.

And like a spider that builds its web overnight, an elite team of steel workers in McMurdo has just completed building two massive new fuel storage tanks in record time.

Capable of holding 2 million gallons of fuel each, the tanks will replace older models located on the hillside above McMurdo. "The other tanks have reached the end of their service," said Tom Learned, a veteran of 19 years in the steel industry and ASAconstruction manager of the project. "The workmanship [of the old tanks] does not meet today's code. We're pre-empting an environmental hazard."

Removing one hazard has entailed accepting another -- building steel tanks is dangerous work -- especially in Antarctica, where temperatures plummet and winds can gust to 30 knots in a matter of moments.

Iron work ranks among the world's most dangeous jobs. According to Learned, one out of 15 iron workers is killed within 10 years of entering the trade. Common accidents include falling from high beams and being struck by falling materials.

A talented team of workers in McMurdo takes little stock in these grim statistics. Hand-picked by managers in the United States, these iron workers are among the best in the country.

"They're really go-getters," Learned said. "It's hard work and it takes a tough individual to hang with it. It's physically demanding." Even as Learned speaks, and as if to make a point, welding sparks fly into the cold air, descending like the trail of a comet over a steel planet.

Tom Learned watches over the crew that built two new, 2-million-gallon fuel tanks in McMurdo.

Inside the tank, the noise is deafening. Workers pound on the steel, sending ear shattering reverbirations in a spiral around the inside of the structure, but no one seems to notice. The work continues nearly nonstop, 20 hours a day.

Thirty feet above a steel floor, the steel men stride nonchalantly over the structure. What looks dangerous to one person, however, is just another day at work for another. "It's like walking on flat ground," said Tom Ehnstrom, a North Dakota native. "You just have to respect the height.

"You're always aware up there," he continued. "Take that load of steel," he said, pointing to a sheet of steel attached to cables and swinging in the wind. "As long as I'm aware of what's going on around me, I'm safe."

Learned agreed. "It's dangerous. You can only swing steel when it isn't windy, or else you can turn that thing into a 3,000-pound kite, but safety is always our primary objective."

Which is why all the workers wear hard-helmets all the time. A glance at Daniel Gylten's hard hat tells the tale of a well-seasoned veteran of the trade. "I scratch the names of each job in each state on my helmet," said Gylten, a native of North Dakota. The list is long and includes multiple jobs in seven states and one distant continent: Antarctica.

The cold wasn't alien to all of the steel workers. It made Ehnstrom feel right at home. "In North Dakota, this is our climate in winter," he said. "We're well-adjusted to this climate, except we're used to a lot more snow."

If things go according to plan, Ehnstrom will be back next year to help construct two additional 2-million-gallon fuel tanks. "Once all [four] tanks are up, just about all the tanks on the hill will be gone," said Stan Wisneski, ASA Station Manager. For now though, the new tanks will remain empty, until containment berms can be built around them; meanwhile the old tanks will continue their service. ✹

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A Tale of Two Tectonic Sites

Story and photo by Ginny Figlar

It comes down to the difference between honey and molasses -- not for use in a baking recipe, but for answers about the movement of the Earth's crust in Antarctica.

Two groups of Antarctic Global Positioning System stations, one installed in Marie Byrd Land and one in the Transantarctic Mountains, will work conjunctively to measure vertical and horizontal crustal movement in an effort to obtain the critical pieces in the global modeling puzzles of tectonics and deglaciation.

"The big gap in those models is in Antarctica," said Andrea Donnellan, a researcher with the Jet Propulsion Laboratory in Pasadena, Calif., who is installing three GPS stations in Marie Byrd Land.

Both sites will collect year-round data, powered entirely by wind and solar energy sources. Donnellan, working with principal investigator Bruce Luyendyk, will use the GPS equipment to study horizontal tectonic spreading between the Transantarctic Mountains and Marie Byrd Land. Carol Raymond, principal investigator of another project measuring crustal movement in the Transantarctics, also from JPL, will use nearly identical equipment to determine vertical movement of the mountains caused by isostatic rebound.

This slow uplift, on the order of a centimeter or two per year, is the rebounding of the mantle after being depressed by the last glacial maximum, or peak ice load, several thousand years ago. In the Northern Hemisphere, the major phase of deglaciation occurred prior to 10,000 years ago. But something different happened in the Southern Hemisphere, Raymond said, and scientists are unsure exactly when the Antarctic ice sheet collapsed.

"There are various models floating around that predict when most of the ice melted in Antarctica," she said.

One deglaciation model predicts that melting occurred in the mid-Holocene Era, 7,000 to 4,000 years ago. Based on that model, the uplift of the Transantarctic Mountains should still be in its main rebound phase, Raymond said, and able to be measured by the sophisticated GPS equipment over the span of the next four years.

One hitch in the research is how much the mantle will tell the scientists. When depressed for thousands of years, the mantle has a "memory" of where and when it was carrying the load. However, that depends on its viscosity, which controls how quickly it returns to its equilibrium.

"There's a chance that we may not measure the signal left over from the ancient melting because the mantle may be so weak that it's more like honey than molasses," Raymond said, referring to the more rapid rebound of a mantle resembling the consistency of honey.

It is easy to decipher the slow isostatic rebound of the last glacial maximum from the more recent and faster elastic response of smaller ice loads. If the ancient information can't be traced, Raymond said she could still use the elastic response data in a model to gain other answers -- such as what happened to the water of the more recently melted ice.

"There's this missing component in sea level rise that can't be accounted for," Raymond said. The discrepancy is miniscule: 1 millimeter per year, and Raymond said it is speculated that this 1 millimeter could be coming from the melting of Antarctic ice.

Andrea Donnellan double-checks her GPS equipment before sending it out to Marie Byrd Land as Oivind Ruud, a GPS specialist, looks over her shoulder. The sophisticated GPS system is powered year-round by solar and wind energy.

Millimeters are what Donnellan will look at also. The tectonic movement she is studying is barely detectable -- so small that GPS technology was not advanced enough to detect it until within the last few years.

"Marie Byrd is moving away from from Ross Island essentially," Donnellan said. "But how fast that's occurring nobody knows."

The speed can be anywhere between 1 and 5 millimeters per year. While that amount may not seem significant, Donnellan said it will provide crucial information about earthquakes around the world. The movement will also help scientists better understand the role tectonics may play in controlling ice sheets.

It will be a while, however, before they even have preliminary results. The GPS system and data logger have the capacity for five years of data, which will be downloaded annually from Marie Byrd Land and in real-time via radio from the Transantarctics. Beginning next year, Raymond and Donnellan should start to see evidence and trends of movement.

"You can't make the Earth move any faster," Donnellan said with a laugh. ✹

Teachers Take Part in Learning Experience

Story and photo by Ginny Figlar

Even with travels through the Amazon rainforest and tropical countries including Belize and Trinidad, there was one species of bird eluding the sight of science teacher Fred Atwood.

"I'd really love to see an Antarctic penguin," Atwood told one of his high school students during a recent trip to Kenya.

The teacher's wish came true with a visit to a penguin rookery during his first weekend in Antarctica as a participant in the Teachers Experiencing Antarctica program. A science teacher from Flint Hill School in Oakton, Va., Atwood is among eight U.S. teachers in Antarctica chosen this season for the National Science Foundation-sponsored program.

Operating in the Arctic since 1995 and the Antarctic since 1992, the program provides teachers with unique, hands-on polar research opportunities. Atwood got his hands wet with Antarctic fish, assisting principal investigator David Petzel and a team of researchers studying how fish keep from freezing in frigid Antarctic waters. Atwood spent most of his time counting cells scraped off the fish's gills to determine the salt balance. With birds being Atwood's true passion, this project not only opened his eyes to a new landscape but also a new creature.

"The last thing I would have chosen to study would have been fish," Atwood said. But, as he wrote to one of his students recently, "It was a good stretch and it made me more well-rounded."

Atwood's ultimate goal is to make his students more well-rounded. To that end, he has taken them on voyages around the world, from the Andes Mountains to the Everglades, to study tropical ecology.

"This is quite a switch because I'm going from the most diverse environment to the least diverse in terms of land-based animals," he said of his journey to the icy, barren landscape of Antarctica.

His students are making the trip virtually as Atwood spends between two and four hours a day writing an online journal and e-mailing individual students.

Teaching from the bottom of the world has generated an enthusiastic response, he said. Students from his biology, field natural history, field ornithology and tropical ecology classes bombard him with questions. One student recently asked Atwood why the ice in Antarctica is blue. After a long conversation with his roommate, Barclay Kamb, Atwood had an answer -- it has to do with pressure turning the ice into a crystalline form that screens out red light.

Fred Atwood, one of this year's Teachers Experiencing Antarctica, prepares a slide for viewing through a microscope.

While he has been inspired by the blue ice and beautiful scenery of Antarctica, Atwood is excited to return to Virginia. Like a fish out of water, he is looking forward to being back in a classroom.

"I am definitely a teacher," he said. ✹

CORRECTION

"I think you have incorrect information in the 11/22/98 issue. You say the first females at South Pole was in 1973. I wintered at Pole in 68-69, and the plane we left to go back to McMurdo on brought in the first females at South Pole. Don't know the names, but they stepped off the tail gate, in step with Adm. Reedy so that none could say they were there first. This was in October or early November of 1969. Check the records."

Jim Wallace, UTC USN Ret.
WO 64-65, 68-69 Pole, 72-73, 74-75 McMurdo

We're always happy to hear from our readers, especially if we've made a mistake. You can always contact The Sun by email at: sun_news@asa.org

Letters to the Editors

I am upset about the story "Fly on the wall" in the Nov. 22 issue of *The Antarctic Sun*. This is not to whine about the use of the language. I am upset that the story never mentions the other people living in 155 that have to put up with these guys and others like them who party and play guitars whenever it fits their schedule. It's a slap in the face to all the people, myself included, who have tried to get along in 155 only to be disturbed by people who don't care about their neighbors.

Respectfully,
Rich Stimson

Ginny Figlar finds refuge on a windy evening behind Scott's hut. Photo by Ty Milford.

"It was easy to see that here nature was at her mightiest."

Roald Amundsen

Who's in Charge?: A look at military command structure in Antarctica

by Maj. Ted Kobierski

With the U.S. Air Force assuming control over Operation Deep Freeze and providing support in Antarctica, it may be a good time to go over what the operation is and why the Air National Guard is here.

Operation Deep Freeze is the name given to the Department of Defense's support to the U.S. Antarctic Program and is currently commanded by Col. Richard Saburro.

The commander of Operation Deep Freeze, or CODF, is responsible for providing Antarctic military logistics support to the National Science Foundation as part of the U.S. Antarctic Program. A memorandum of agreement between the National Science Foundation and the Department of Defense gives the commander the authority to provide this support.

The logistics support covers a wide range of activities, such as providing LC-130 airlift in Antarctica and New Zealand; aviation technical support, such as weather forecasting, air traffic control, C-141 and C-5 airlift support between Christchurch and McMurdo Station, shipborne fuel and cargo delivery to McMurdo Station and U.S. Coast Guard ice breaker support in advance of the annual fuel and resupply ships. When U.S. Air Force aircraft, Navy aircraft and ships, and Coast Guard ice breakers come to McMurdo Station, they fall under the command of the Operation Deep Freeze commander.

The commander operates out of two offices, Air National Guard Detachment 13 at the International Antarctic Center at Christchurch, New Zealand, and McMurdo Station. Detachment 13 provides command-and-control and flight operations support for Operation Deep Freeze and maintains a year-round U.S. military presence in New Zealand. The personnel at Detachment 13 have four-year tours of duty.

At McMurdo Station, the commander of Operation Deep Freeze oversees flight operations for the U.S. Air Force and Navy. In addition, the commander is responsible for the morale and welfare of those military personnel assigned to McMurdo Station.

While the commander's responsibilities are numerous, first and foremost is to ensure good working relations and communications between the military forces, NSF and ASApersonnel continue.

Did You Know...

by Brenda Joyce

The Emporer penguin rookery at Cape Crozier was discovered in October 1902 by R.S. Skelton, a member of Scott's 1901-1904 Discovery expedition. A month later, C.W.R. Royds, another Discovery member, visited the rookery to collect specimens. By then, the young emperor penguins had already left the rookery, and Royds recovered only one frozen egg.

•

The "weirdest bird-nesting expedition that has ever been made" was undertaken in 1911 to collect penguin eggs from Cape Crozier. Edward A. Wilson the geologist, medical officer and artist on Scott's two Antarctic expeditions believed the penguin to be the most primitive bird in existence. He hoped to gather eggs to trace the ancestry of the species. The excursion to the Cape was undertaken in total darkness except for the occasional glow of the moon and aurora.

•

Edward Wilson spent his birthday on July 23, 1902, "in our bags without a meal, or a roof, gradually getting drifted up with snow under the weather wall, wishing the wind would drop." Instead, winds tore away the canvas roof till scraps of green cloth the size of a pocket handkerchief were scattered across the terrain.

•

In 1965, a private plane carrying 30 passengers and crew flew from Honolulu across the North Pole to London and Lisbon then to Buenos Aires and across the South Pole to Christchurch, returning to Honolulu. Leased from the Flying Tigers, the Boeing 707 was sponsored by Rockwell-Standard Corporation of Pittsburgh as a scientific exploration with emphasis on high-altitude meteorology and cosmic radiation.

•

The first around-the-world solo flight across both poles was accomplished in November of 1971. Flying a twin-engine Piper Navajo aircraft, Elgen Long crossed the South Pole from Punta Arenas and landed at McMurdo en route to Sydney, Australia.

USAP Marches to the Beat of a Cleaner Drum

by Molly Mayo

The next time you head out of town to hike the Castle Rock loop, listen carefully. You may just hear the sound of drums, 55-gallon drums that is.

Thanks to the operation of a new industrial drum washer, hundreds of 55-gallon drums that used to sit idle, waiting for the next boat back to a landfill in the States, are being shaken up, cleaned out and reused.

The latest step in an overhaul of McMurdo's new hazardous waste management program that began in 1993, the drum washer is helping to make the U.S. Antarctic Program more efficient and environmentally responsible.

The 55-gallon drum, most often used to store oil, glycol and fuel, is a mainstay of the USAP. Thousands of drums are used to supply South Pole, deep field camps and light aircraft refueling sites.

In the past, these drums could not be reused if their contents were exposed to water, snow or an unknown contaminant. About 500 drums were rejected for reuse last year. Ordinarily, many of these drums would be shipped to a Washington hazardous waste facility. With the help of McMurdo's new drum washer, times have changed.

The cleaning process is deceptively simple. In less than two and a half minutes a dirty drum can be cleaned and ready for reuse. First cleaned with fuel, then rinsed with methanol to remove remaining water, the cleaned barrels are sent back to the fuels department for reuse. Waste gererated from this process is minimal as the cleaning solvents can be used repeatedly. Drums that are damaged beyond repair are rinsed with detergents and hot water, crushed and recycled as scrap metal in the States.

"In the past, we have had to purchase a supply of drums each year as replacements to meet the needs of the program," said Tom Vinson, supervisor of hazardous waste for ASA. "This year we didn't have to purchase any."

Instead, Vinson expects 600-800 drums to be washed and either reused by fuels or recycled in the United States. At that rate, the program will save $22,000 on 55-gallon-drum processing. The new machine cost $20,000. If it works as expected, the machine will pay for itself within a year.

One of the many 55-gallon drums saved from landfills this year with new drum washer. Photo by R. Zimmerman.

The drum washer is just one aspect of an ambitious hazardous waste management facing decades of neglect. As recently as five years ago in McMurdo, the contents of nearly 900 drums needed identification. These drums contained hazardous waste accumulated in the late '80s and early '90s. In 1994 and 1995, these stockpiles were shipped off the continent.

Today, hazardous, solid, radioactive, biological and food wastes generated by the USAP are sent home within 15 months of their collection. Approximately 500,000 pounds of hazardous waste were sent home last year. That's about 300 pounds of waste for every McMurdo resident.

This number is decreasing as hazardous waste mangers seek new ways to reduce and reuse waste materials, all in an effort to keep Antarctica clean.

"The last thing we want to do is landfill," responds Vinson, "If we can send less waste home, that is better. If we are able to reuse what we have, we will reduce what we need to import, and reduce what we ultimately need to ship home." ✹

Views From Antarctica's Main Street

Q: If you could change one thing about McMurdo, what would it be?


Jim Lis, Cargo Specialist

"I wish there was a lot less mud. The mud's getting to me."


Melinda Woods, Dining Attendant

"Everybody would do their own dishes."


R. Zimmerman, Waste Management Specialist

"Bigger beds."


Todd Mays, VXE-6 Medical

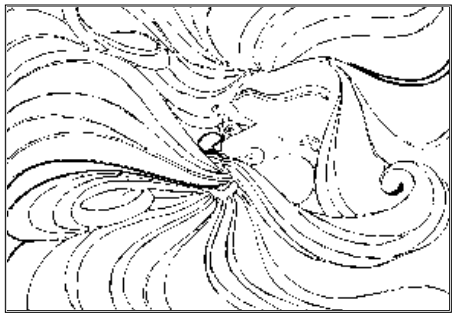
"New gym equipment. More up-to-date weight-lifting stuff, treadmills and bikes.

Meg Flanagan and Jeff Derry take a break from setting-up fuel lines to Williams Field, 7.5 miles out on the ice shelf off McMurdo Station. "It's hard work but fun," Flanagan said of the job. " Iwouldn't want to be anywhere else in the world."

Nearly 30,000 feet of flexible, lay-flat hose was used to establish the line, which will fuel aircraft when Williams Field opens, sometime in the next two weeks.

The hose, which holds 47,500 gallons of fuel when full, is kept filled at all times to keep it from blowing away. "When you see seven miles of hard-pack hose, no leaks,"said Flanagan, " Boom! You're connected." Photo by Alexander Colhoun.

Weather Central



Muddy Days, Here to Stay?

by Alexander Colhoun

It's that time of year again -- mud season -- when McMurdo's streets turn a dark brown, when hills become waterfalls and when piles of snow disappear overnight. A quick review of recent high temperatures reveals, however, nothing higher than 29 F.

While it may seem Mother Nature has lost control, the answer is really quite logical: the culprit is sunlight. "Even though temperatures have been below zero or freezing, without the cloud cover the sunshine is enough to melt the ice," said Joe Kramer, weather forecaster in McMurdo.

Carol Cummings, another forecaster, explained that radiation from the sun bakes the black volcanic rock, which absorbs the heat and melts the snow, leaving Mactown residents with rivers for streets despite cool temperatures.

While this radiation creates a modified Venice in town, it has kept the skies around McMurdo bright and clear. "The recent weather has been really nice," said Kramer. "All the weather systems have stayed north of us."

According to Kramer, most of the storms that affect McMurdo's weather are due to low pressure systems that have worked their way up into the Ross Sea and the Ross Ice Shelf. Typically, low pressure systems circumnavigate the Antarctic continent at an alarming rate of speed. This is due to the absence of land masses in the southern hemisphere, which allows these lows to literally scream around this continent. Every now and then, one of these lows will move off of the normal track and this is when we receive most of our weather at McMurdo.

The forecast? Don't get too comfortable, said both Kramer and Cummings. "The long range forecast is nearly impossible to predict," said Kramer. "It shouldn't get nasty until late January or February, but you just never know."

Ruben and the Bohemian Painters' Top 10 Reasons to Find a New Roommate

10. They try to sell you cigarettes and dream of getting out of this joint
9. You can't remember all of their names
8. Your roommate goes by Binky the Clown in the off-season
7. Your roommate is ALWAYS naked
6. Roommate has borrowed everything you own
5. Come home early and see your roommate wearing your underwear on his head
4. Two words: Nut Case
3. They take the once-a-week two-minute shower way too seriously
2. Cries at night and wants to go home

and the NUMBER ONE reason to find a new roommate is ...

They always want to party until the sun sets

10:37 p.m.

"Once the dinner rush settles down, it gets peaceful," said Ben Bonnello as he prepared turkey pastries for the Thanksgiving dinner.

11:39 p.m.

Victoria Landgraf, left, and Peter Lund take advantage of slow night-time computer usage to make repairs on the station server.

12:07 a.m.

"The pace at night is extremely different than the day shift,"said Annie Lowery.

NIGHT SHIFT

...continued from page 1

in weather calls, making connection calls for flights and monitoring air traffic," said Lowery. "Something is always happening."

Step inside the galley and the difference between night and day is equally immaterial. Feeding a community of 1,100 people requires a round-the-clock staff. Besides prep work for major meals there are flight-lunches to be made; the midnight meal must be prepared; and breakfast is just a few hours away.

Cooks and bakers, dining room assistants and pot washers make their way around the kitchen to the beat of ZZ Top, each person engrossed in their work. It's a crew of independent operators who find solitude in the evening hours.

"When you are baking you don't want people around" said Jan Jasperson, a baker. "Baking is an emotional thing. You become bonded with the dough. You have to be the dough. Very Zen. Handling it. Caressing it. With no one around you become attached to the dough."

While Jasperson finds his karmic balance with yeast and flour, cargo handlers in McMurdo's Movement Control Center are seeking their own tantric center. "We're always striving for the perfect pallets," said Ryan Luedtke with a smile as he prepared an over-sized box for shipment to the South Pole. "Some nights you build a little faster, some slower -- you gotta' work with what you get."

What you do get a lot of on the night shift is coffee -- thick, black brews that seem to gain potency as they rest in their pot-warming cradles through the night. But heavy doses of caffeine aren't always enough to shake the aura of the night. "Even though you know this is your day, a part of you still knows everyone else is sleeping," said Stephanie Brackin.

Lowery agreed. "Over time I feel like I'm trying to trick my body to stay up," she said. "It doesn't feel like a natural rhythm. It takes a long time to biologically adjust to this shift."

Adjusting can be a problem, especially when the night shift arrives by accident. Twenty minutes before midnight finds Peter Lund and Victoria Landgraf hard at work on the station's computer servers. "Just so you know, we're on the day shift but we never stopped," Landgraf said. "We've been here 16 hours at this point."

For most night shifters, however, time is entirely a matter of perspective. For Marilyn Cohenour, the graveyard shift

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1:11 a.m.

Under the watchful gaze of Kramer from Seinfeld, Katy Burke, front, and Patrick Schuman settle into the night shift.

2:17 a.m.

Micrometer meets monster truck as Ron Gabriel makes adjustments to an articulation joint on a massive Delta vehicle.

3:39 a.m.

Becky Parfett tugs at a cargo strap as she secures a load headed for the airfield. "We get the town to ourselves," said Parfett. "We're like a little family."

3:49 a.m.

It's all right," said Dan Juarez, an iron worker from California, of the night shift. "But my body gets confused because it's daylight all the time."

4:14 a.m.

Sandi Terri lays down a full griddle of pancakes. Each morning her crew makes close to 1,400 cakes to feed the McMurdo community.

4:45 a.m.

Joe Kramer, left, Don Grey, center, and Lt. Jim Greene review weather charts before Greene submits a final flight schedule for the day.

NIGHT SHIFT

...continued from page 8

begins at 11 p.m. Rising at 6 p.m., she can take in an evening science lecture or movie before coming to work. It's a strange twist to the normal day -- pleasure before work -- but it's a compromise she relishes. "It's like a small town instead of a major metropolis," she said of the night shift. "We're little rats and we have a warped sense of humor, but we love it."

There are, however, less appealing sides to the night shift racket. Some find the ordeal of breakfast for dinner and dinner for breakfast difficult to stomach. Others feel the vacuum cleaner, like dogs, cats and children, should be banned from Antarctica. "I say they shouldn't have vacuums on the continent," said Ron Caputo after many a sleepless day. "People just don't conceive us, they don't see [our] world."

Jasperson, the baker, said, "The only hardship you'll find is that your roomate is on the day shift. It's hard to come home, turn the lights on, watch TV and crack a beer when your roomates have to get up at 5 a.m."

A double-edged sword, the real drawback of the night shift is also its greatest virtue: isolation. Working nights guarantees a certain autonomy. "The work environment is relaxed," said one worker. "We get things done but have fun doing it." But this independence comes with a price. "We come down here to work, but the experience is also about relationships, the people you meet" said Garrett Hixon. "On nights you don't get to participate in activities with the rest of the community."

Nor is the store open, nor is the hairdresser on duty, nor is the radio station manned by disc jockey, and the list goes on. There is, however, one exception: the bar. Open three mornings a week, the day bar is a sub-culture of its own. "It's dark and quiet," Sparkles said of the Day Bar, where a single light over the register competes with the dim glow cast off the stereo. "We have our own atmosphere."

Just as the day bar is cranking up for another morning of Beam on the rocks and Crown Royal and Coke, Annie Lowery is getting off work at MACOPS. Waiting for her replacement, the High Frequency radio squaks an incoherent banter of foreign languages and alien-like verse, a commentary it seems, on the night. "There's stuff happening out there," said Lowery, of the radio and perhaps the night. "Where is it all coming from? What are the different languages? The comms are just unbelieveable." Beliveable enough, as anything is possible on the night shift. ✹

5:04 a.m.

Allen Berggren tests the pH and chlorine levels of freshly desalinated waters inside McMurdo's water plant.

5:35 a.m.

The day starts early for Wendy Raven as she gets in an early morning workout. "I go in at 5 and workout till 6," she said. "It takes me forever to get ready for work."

6:18 a.m.

Night shift comes to a close as the clock strikes 6 a.m. and a worker heads home after another long day of work under the sunny skies of Mactown.

UPDATES

McMurdo Station
by Hope Stout

McMurdo Station celebrated Thanksgiving on Saturday, Nov. 28, with mounds of good food from the talented galley staff and gracious volunteers from the community. Our neighbors from Scott Base were invited to participate in the festivities as well.

Visitors from the National Science Board arrived on Nov. 30 to visit McMurdo as well as the South Pole, Siple and the Dry Valleys.

The first week of December sees the end of the wheeled C-130 flights and the beginning of the skied aircraft, LC-130s. The move of the ice runway to Willy Field is anticipated in the next week or so, depending on the sea ice conditions.

Many of the science projects for the first half of the season are winding down. The second half of the science season will pick up primarily after the Christmas holidays.

Palmer Station
by Ron Nugent

Palmer Station celebrated Thanksgiving with a very large, traditional meal on the evening of Nov. 27. A two-day weekend and recovery period followed. Sadly, fresh food was not available for the holiday. But there will be freshies on the next ship, which arrives Dec. 5.

The sea ice continues to impact our boating operations. There were only eight days last month when boating was allowed due to sea ice conditions. This is a big impact to researchers who depend on boats to do their work. The ice teases us regularly, it blows out in the late evening and holds about a mile off shore, then the wind changes and it locks us in again. We all hope that soon the ice will go away for good and normal boating operations resume. Our population continues to hold steady at 30 persons, 11 science and 19 support.

South Pole
by David Fischer

South Pole celebrated Thanksgiving on Nov. 28. Many staff assisted Food Services to prepare the meals for three seating.

Information Systems tested an Iridium telephone beta unit during the week. The quality of the connections was very good and connectivity was similar to that of cellular systems. ASAcontinued progress on the Garage/Shops and Fuel Storage Facility SPSE/SM projects. In particular, on the Garage/Shops Project, all wall panels for grid 7 are complete, the water tank installation is complete, and the installation of upper roof panels has begun. On the fuel storage project, the excavation of interior of arch is complete, and the excavation and footer installation for pump module and addition was begun.

R/V Nathaniel B. Palmer
by Tim Bjokne

The Nathaniel B. Palmer spent Thanksgiving nosed into the ice near Cape Royds for a bit of R & R and to complete an emergency helo resupply from McMurdo Station. The crew also hosted several visitors from McMurdo Station for the day.

Thanksgiving festivities followed the helo ops with all hands taking a walk on the fast ice near Cape Royds. Wildlife was in abundance, including a whale that surfaced in the open water of the NBP's wake giving everyone a brief "National Geographic Moment."

Following this Thanksgiving hiatus, the NBP returned to chasing the Polyna, sailing eastward along 77 degrees South Latitude. According to Karl Newyear, the Marine Projects Coordinator for NBP 98-07, the phaeocystis bloom has gotten so thick that "in places the sea water looks like soup due to the high concentration of phaeocystis."

The NBP is awaiting the delivery of a box corer borrowed from New Zealand's National Institute of Water and Atmospheric Research in Auckland to replace the one lost at sea during the cruise. Many thanks to the NIWA for lending out the unit on such short notice.

Data collection for the final ROAVERRS cruise continues through the middle of December.

R/V Laurence M. Gould
by Tim Bjokne

Thanksgiving Day found the Laurence M. Gould in the middle of the Drake Passage with all hands thankful for the smooth seas -- smooth by the Drake's standard, as the swells varied from six to 10 feet sometimes getting as low as two to three feet.

The Gould deployed several ocean-bottom seismometers during the crossing and is now "island hopping" with stops so far at land station CJAM at Cape James, Smith Island. CJAM is solely a GPS station with no seismology equipment. The Gould has moved on and is now servicing a science project on Low Island, located at the south end of the Bransfield Strait. This stop requires at least one overnight on the beach by the science party for servicing a GPS station and seismic equipment.

A short stop at Palmer Station is planned later in the cruise, probably on Dec. 20.

ASA, Denver
by Jim Chambers

The Denver headquarters office parking lot remains half empty as many of our Denver support staff are currently deployed. Minimal additional ASAemployees remain to be deployed until the winter-over augments arrive.

Although the Denver office was officially closed for the Thanksgiving holiday, a great deal of effort was expended in expediting materials for the annual resupply vessel to McMurdo. A significant amount of cargo will be on this years vessel to support the South Pole Station Modernization (SPSM) project including over 800 tons of steel for the new elevated facility and the engine generators and associated electrical distribution equipment for the new power plant. Vendor inspections continued in virtually all areas in preparation for materials delivery to Port Hueneme.

National Science Foundation
by Guy Guthridge

About 80 people on average attended the eight-part Antarctic science lecture series that NSF, Antarctica New Zealand, and the Canterbury Museum sponsored in Christchurch, New Zealand, on Friday evenings from Sept. 25 to Nov. 13.

Audience reactions were very positive. In one letter to the NSF representative, New Zealand, one couple wrote that the series "does wonders in promoting the presence of NSF both in Antarctica and in its support base here in Christchurch."

NSF gives special thanks to lecturers Steve Kottmeier, Art Devries, Peter Barrett, Peter Hillary, Michael Lizotte, Kendrick Taylor, Donal Manahan and Clive Howard-Williams for helping New Zealanders better understand current Antarctic science and related issues. Photographs by USAPparticipants James Barker and Norbert Wu were on display in the museum during the series.

Christchurch, New Zealand
by Brian Stone

The pace of operations in Christchurch is starting to slow slightly as we approach the closure of the ice runway and the end of wheeled-aircraft operations until the Pegasus runway opens in January. The cargo flow is proceeding as planned, and there is no backlog of materials in the air cargo yard.

A pleasant change from previous seasons is the fact that the flow of mail to the ice (letter and package) has been relatively consistent this year. This time last year there was a backlog of more than 50 triwalls of mail in the cargo yard, but this season we've been able to work the mail into the flow to the ice to prevent the need to dedicate missions specifically to clear the mail backlog. We also hope the folks on the ice have noticed that we've been especially conscious about following the "first in, first out" policy with regard to mail shipments.

BEAKER NEWS • BEAKER VIEWS

The Voice of Antarctic Researchers

by Christine Siddoway, Principal Investigator, GF-088

We are headed into the abyss of Antarctic weather. Gale force winds and driving snow are what Marie Byrd Land has in store. Just as likely are moisture-laden ice fogs that shroud everything in eerie silences for days on end.

The destination is the Ford Ranges in Marie Byrd Land, fondly refered to as Mighty Bad Land, where the weather isn't the only force we're up against. Our team will look for evidence of the geological forces that caused faulting and produced the system of linear, parallel mountain ranges there.

Though less dramatic than the spectacular western shoulder formed by the Transantarctic Mountains, the subdued eastern margin of the Ross Sea forms a crucial element in interpretation of the tectonics of the Pacific boundary of Antarctica.

We believe the Ford Ranges are fault-block mountains developed after the onset of West Antarctic glaciation, 20 million years ago or even earlier. Polished, glaciated surfaces on mountain summits, once part of a continuous plateau, are cut by glacier-filled valleys. The valley glaciers have a different flow direction than older ice that flowed across the summit plateau. The plateau surface was apparently cut-up by fault zones, which are now filled by the valley glaciers. Information about those faults is what we are after.

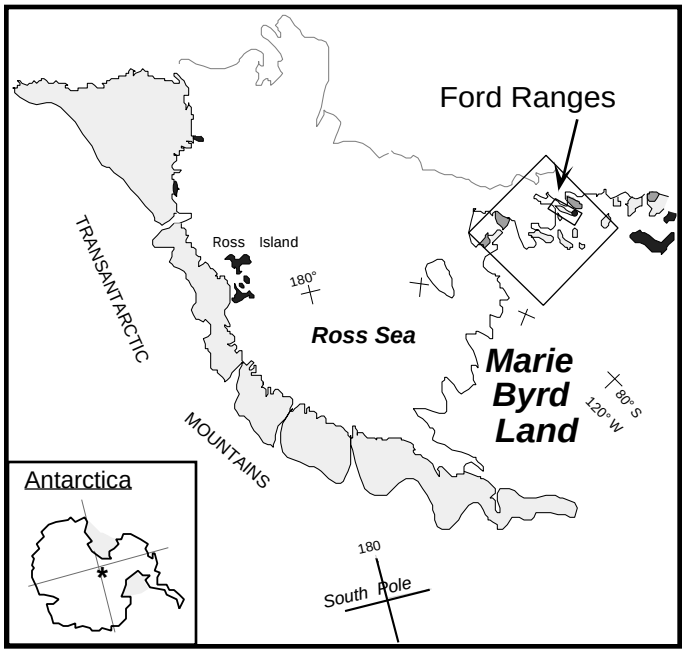
The range-and-glacier pattern in the Ford Ranges calls to mind the Basin and Range Province of the western United States in Nevada and southern California. This region is a tectonically active area where faulting occurred in response to stretching of the Earth's crust. There, important faults are clearly exposed, forming sharp boundaries along linear mountain ranges.

In Antarctica, however, the fault identification game is tough to play. Glaciers commonly develop along the structural weaknesses offered by geological faults. Glacier ice conceals fault zones, where adjacent mountain blocks may have moved with respect to each other.

Because of this, our team of geologists can't rely on direct observation of faults to understand how the range-and-glacier landscape of western Marie Byrd Land developed. Special geological techniques we will employ include detailed analysis of small-scale fractures, which can serve as a proxy for large-scale faults, paleomagnetic studies, surface exposure dating, glacial geomorphology, and satellite image analysis. All of this work is dependent on broad regional coverage, which we'll get from a six-week, overland traverse with skidoos and sledges, camping on glaciers as we go.

The modest size of the mountain ranges is not the only reason the Ford Ranges have not been thoroughly studied. It's not uncommon to have three- to five-day wind storms, with winds howling steadily at 60-70 knots, and gusting even higher.

When the weather clears, we dedicate hours to shoveling drifted snow that has buried our camp and equipment. That work completed, our team can embark on a six- to 25-mile skidoo trip from camp to a bedrock ridge or a set of nunataks.



Graphic courtesy of Christine Siddoway

Our field work amongst these glaciated peaks requires hours of geological observations, precise measurements and rock sampling as we move between outcrops. We work at a relentless pace, often returning to camp late at night, but rest is only a storm away, and we are likely to spend many hours pinned down by Antarctic gales.

As storms rage outside, we'll have time to consider the dynamic events that shaped the Ford Ranges. There are two possibilities for the Ford Ranges: first, that they are associated with doming of the Earth's surface around a large volcanic center in central Marie Byrd Land. Alternatively, the mountain ranges could be related to geologically young Ross Sea events, poorly known in Marie Byrd Land, but well-expressed by the volcanism along the Terror Rift, upon which Mount Erebus lies.

In addition, the Ford Ranges form the nearest rock outcrops to the Ice Streams of the West Antarctic Ice Sheet, which are the focus of intense glaciological research. The faulting history of the Ford Ranges may be important for understanding why the ice streams developed where they did.

Other science projects in the Ford Ranges this year will use other methods to answer questions about regional deformation on the eastern margin of the Ross Sea, including the Support Office for Geophysical Research and Andrea Donellan and Bruce Luyendyk of G0-121, with a Global Positioning System installation.

Pulling information from our six-week field expedition together with data collected by the other science groups, we hope to gain new and dynamic insights into the geological and glacial processes that sculpted the peaks and valleys of Antarctica's Ford Ranges. ✹

Dear Lush Life Luxuriants,

There is a quotation on the chalkboard in the breakroom of the MEC that reads, “Overheard at lunch: McMurdo is the only place where your reputation has more fun than you do.” Given the party they threw last weekend, the folks in that fine department seem to be doing their best to rectify the problem, the result of which precipitates many questions in my head.

Like, is the percentage of men here who enjoy dressing in women's clothing proportional to the percentage of men in the rest of the world with the same interest? Why do most of us keep spending our one day off per week hung over? Especially in a place where, if you ever leave your room on a Sunday, lazybones, the sun is always out to poke you in the eye all day and all night long. Is it because we live in a microcosm that I notice these things? Also, does the answer to either of these questions have any correlation to the funky smell that persists in the foyer of my building?

If I had an advice column at my beck and call, those are some of the questions I might ask . You probably have some more useful questions on the tip of your Black Gecko stained tongue. They may regard a quarrel with your better half, they may regard your inability to get a really good shave on the problem areas of your legs (for some of you budding drag queens).

We all know these problems exist, yet nobody is seeking answers, and I can't help but wonder why. Perhaps it is just a trust thing. Perhaps if you knew more about the problems of the person from whom you sought the advice, you would feel a little better about asking for it yourself, so here you go: McMurdo is a giant laundromat to my life-size pile of dirty socks.

Each load that enters the washer bears a need to come clean, and the paired-up socks faithfully throw themselves into the abyss of cloth-eating detergent, and lead-filled, desalinated water, knowing full well that there is only a 75 percent chance of survival. Mateless, the unlucky 25 percent emerge with the others, damp and baleful, to commence duty in the dryer.

While I sit on the warm, vibrating machine waiting for them to finish their cycle, I wonder, are the missing socks an exercise in accepting the inevitable, or just a sacrifice to the Skua god? Do you have the answer? If so, or if you have questions of your own, write me by e-mailing the newspaper, or, if you want to retain anonymity, slip a note under The Sun's office door.

Virtually Yours,
Auntie A.

You can send your questions for the preceptress of Antarctic advice to sun_news@asa.org.

Around Mactown

The McMurdo Historical society is forming to preserve artifacts, photos, documents and oral history of the station. Drop by the Coffeehouse from 6:30 to 8 p.m., Sunday, Dec. 6. Contact Brenda Joyce at x2266

Dec. 12 is the last day the McMurdo post office can guarantee parcels over 2 pounds to go out via air. It is also the last day to send mail from McMurdo to the “Hold in Christchurch” address.

General Science Lectures:
Sunday, Dec. 6
"Under Ice Forging Behavior of Weddell Seals" by Randy Davis

Sunday, Dec. 13
“The Dawn of the Skeleton” by Sam Bowser

Technical Science lecture:
Wednesday, Dec. 9
Carol Raymond

Calendar

Dec. 6
Open House, Cape Roberts Project
1-4 p.m., Crary Lab

Dec. 7
Slide show on Antarctica, by Tom Learned
8:30 p.m., e-side Galley

Dec. 9
Karaoke at Gallagher’s, 8 p.m.

Dec. 10
Steve Hendricks, Acoustic Music
8:30 p.m., Coffeehouse

Dec. 11
The Dating Game, 8:30 p.m., Gallagher’s

Dec. 12
Helo Party

Dec. 14
Slide show: Across Asia, by Sandy Colhoun
8:30 p.m., e-side Galley

Dec. 16
Comin and Goin, Bluegrass Funk Band
8 p.m., Gallagher’s

Dec. 18
Brothers Zim
8 p.m., Coffeehouse

Dec. 20
Art Show
1:30-3:30 p.m., Galley

Perspectives

Questioning Age

by Allen Berggren

While preparing for deployment on this trip, I made a sobering discovery -- my driver's license and passport informed me that I would be turning 50 before I return.

Well, I'm really not ready to be 50, let alone admit it. But I don't want to fall into the trap of denial, either. So I'm opting for a different approach: rationalization.

Accordingly, I have come up with the concept of metaphysical age. Consider the following: if one were to view the Earth from above the North Pole, its direction of rotation would appear to be counter clockwise, but if viewed from below the South Pole, its direction of rotation would appear to be clockwise.

Now, since I, along with most of us here, was born in the Northern Hemisphere, it seems evident that my biological clock would have been programmed to be in synch with the apparent counter-clockwise rotation of that hemisphere rather than the apparent clockwise rotation of the Southern Hemisphere.

Therefore, my age should advance while I am in the Northern Hemisphere and regress while I am in the Southern Hemisphere. My concept of metaphysical age is simply one's chronological age (as indicated by driver's license, passport and other annoying documents) adjusted for the effect of time spent in the opposite hemisphere of one's birth. Seems simple enough, but there's more.

The latitude at which time is spent in the opposite hemisphere must also be considered. At the Equator, the rate of rotation at the surface is about 1,000 miles per hour. That rate decreases with the cosine of the latitude, so that at either pole the rate decreases to zero. (Trust me on that, I think I might be right.)

The rate of regression of age, then, must be proportionate to the cosine of the latitude of time spent in the opposite hemisphere divided by the cosine of the latitude of birth. To determine your metaphysical age, start with your chronological age and deduct the number of months you have spent in the hemisphere opposite the one in which you were born, then deduct that number of months times the cosine of the latitude at which that time was spent divided by the cosine of the latitude at which you were born (to adjust for the regression of your biological clock during this time). Mathematically, the formula is:

M = C - T(opp) - T(opp) * (cos L(b) / cos L(opp))

where M is your metaphysical age, C is your chronological age, L(b) is the latitude at which you were born, and L(opp) is the latitude at which you spent time in the opposite hemisphere. No need for a trig lesson here. If you have a scientific calculator you can work out the math. I did, and in my case it came out to about 44 years.

Okay, I can live with that. I'll just keep coming here until I'm 30. By then I should be able to retire in Tahiti. ✹

M = C - T(opp) - T(opp) * (cos L(b) / cos L(opp))

Sun Sites of the Week

Check out these Web sites for the inside scoop on ice life:

http://www.icetrek.com
http://www.antarcticconnection.com
http://tea.rice.edu
http://www.southpole.com

Recipes for Life

Jan Jasperson seems to be in his own little world baking bread at 9 p.m. among industrial-sized ovens, mixers and stainless-steel cooling racks. But a closer look reveals he is surrounded by friends of an unusual grain.

The 16 pans of cornbread in the ovens are acting temperamental tonight. The white bread, while typically more boring than other breads, is rising to the occasion. And the baking-powder biscuits are taking their sweet old time.

"Dough is alive, it really is," said the 48-year-old assistant baker. "It really has a personality of its own."

Jasperson developed his new-found friendships with bread and other food late in life as he hadn't even boiled water until he was 35 years old. Now a certified chef and recent graduate of the Western Culinary Institute in Portland, Ore., this is his first job as a baker.

"He wasn't really a baker before he came here," said head baker Ben Bonnello, "but he's a hard worker. He's not only a hard worker, he has a good attitude.

"He's always up," Bonnello added. "He's never down."

Because of his laid-back, take-it-as-it-comes attitude, Jasperson helps provide respite from the daily craziness of the galley. Kneading dough helps Jasperson relax, too. After just several weeks of baking, he has become attached to his floury friends, making parallels to life that resemble wise, Chinese proverbs.

"Bread is good for you, and it's good to you," said Jasperson, his white hair poking out the sides of his food-service baseball cap. "If you treat it with respect, it will be kinder to you."

Carefully placing loaves of white bread into the ovens with dough-crusted hands, he added, "You have to be so gentle with it."

Jasperson, a tall man with a sturdy build, resembles a gentle giant to his much smaller doughy counterparts. His demeanor remains steady, despite temperamental equipment and fickle bread.

"It's funny, you can use the same exact recipe and same equipment two days in a row and the bread will come out different," he said. "If you can explain that to me do, because it's sure got me baffled.

"Every hit can't be a home run I guess."

His philosophy about making bread carries over to his attitude about life. His co-workers describe him as someone who is always cheerful.

"Jan's the man," said dining attendant Adam Thompson. Fellow DA Brandon Miller chimed in, "He reminds me of the skipper on Gilligan's Island. He has a very good demeanor."

Jasperson's colleagues aren't the only ones who appreciate his even temperament.

"I think if you stress out, your bread knows it," he said.

Jan Jasperson provides a place for the galley staff to "cool off" with his easy-going personality. While rolling out the dough for these bagels, he said, "This is the Zenful part of it. It's very relaxing."

Profile

Story and photo by Ginny Figlar

Jasperson takes his job seriously, concentrating on every minor detail as he mixes, kneads and bakes his dough. But he easily breaks into a smile, especially at the mention of his previous place of employment, the *Playboy* mansion.

"Well, you know, Hugh Hefner is every man's idol," Jasperson said with a boyish grin. As Hefner is a family man now, Jasperson said the party scene has mellowed out quite a bit. "Still, there are a lot of beautiful women around there though," he added.

Now Jasperson spends his afternoons and evenings surrounded by the thick smell of freshly baked bread. Trudging to work at 2:30 p.m., he knows it's going to be a good night.

"Even if I'm not 100 percent into it, all I have to do is get a little flour on me and it all changes," he said. "I know after a while I'll be there." ✹