November 5, 2006

The Antarctic Sun

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

Destination: 90 degrees south

Ben Twingley / *Pensacola News Journal*

Conrad "Gus" Shinn receives a plaque from Dave Bresnahan, representing the National Science Foundation Office of Polar Programs, commemorating Shinn's feat to land the first plane at the South Pole on Oct. 31, 1956. The ceremonies were at the National Museum of Naval Aviation in Pensacola, Fla.

Shinn recalls South Pole landing

By Steve Martaindale
Sun staff

International attention at the end of October 1956 was focused on Hungary, where a student-initiated uprising against occupying forces of the Soviet Union quickly bloomed into a full-fledged rebellion that left Soviet troops temporarily reeling. A world caught up in the Cold War watched closely for a rip in the Iron Curtain, mostly unaware of a different kind of cold war playing out in Antarctica.

On the morning of Oct. 31, 1956, as the world received reports of Soviet troops pulling out of Hungary, a seven-man Navy team left McMurdo Station for the South Pole with Lt. Cmdr. Conrad "Gus" Shinn piloting an R4D skied airplane named "Que Sera Sera."

Related story inside:
Pilot reviews Pole history
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While they became only the third exploratory party to walk on the South Pole and the first airplane to land there, the success of their mission threw open doors to a permanent station that was under construction in less than a month.

It had been more than 44 years since anyone stood at the South Pole, not since the two five-man parties of Amundsen and Scott arrived within five weeks of each other. Flags of Norway and Great Britain flew there but neither the

See 1956 on page 8

Mayo Clinic takes study to great heights

By Peter Rejcek
Sun staff

Scientists and support personnel have been traveling to the South Pole for nearly 50 years now, taking that giant leap from sea level to nearly 3,000 meters on the polar plateau to further our understanding of the continent, the world and the universe.

Dr. Bruce D. Johnson wants to better understand, in part, why that jump in altitude affects some people more severely than others.

Johnson is the principal investigator for a research team from the Mayo Clinic in Rochester, Minn. The group arrived in early October at McMurdo Station to begin a three-year study on altitude illness called Altitude Symptoms at South Pole (ASAP).

"This go-around we're just quantifying the frequency, intensity and duration of symptoms, and trying to come up with the key predictors that will increase your susceptibility to altitude illness," Johnson explained during an interview at the Crary Science

See ALTITUDE on page 10

Peter Rejcek / *The Antarctic Sun*

Mayo Clinic graduate student Maile Ceridon, left, outfits Steven Slay with a LifeShirt that he will wear to bed at McMurdo and later at South Pole.

INSIDE

Quote of the Week

"A professional wouldn't have a good score here."

— McMurdo bowler on challenging lane conditions.

Camped out on the Ice

Eric Williams, left, grabs a few winks Oct. 28 after spending the night camping outdoors on the Ross Ice Shelf not far from New Zealand's Scott Base. Williams and the other Happy Campers, below, learned polar survival skills during the two-day course. Participants set up Scott tents, built snow caves, and learned general outdoor skills like how to use a gas camp stove. The Field Safety Training Program conducts the class for scientists and others who may possibly head into the field.

Photos by Elaine Hood / Special to *The Antarctic Sun*

Cold, hard facts

Hitting the Trail

Number of various recreation trails around McMurdo Station area: **11**

Longest trail: **Castle Rock Loop at 9.3 miles. Takes five to eight hours to complete, depending on fitness level.**

Highest point on the trail system: **Observation Hill at 750 feet, which takes between one and two hours to complete, depending on your level of effort.**

Newest trail: **Hut Point Ridge was added to the trail system in December 2004.**

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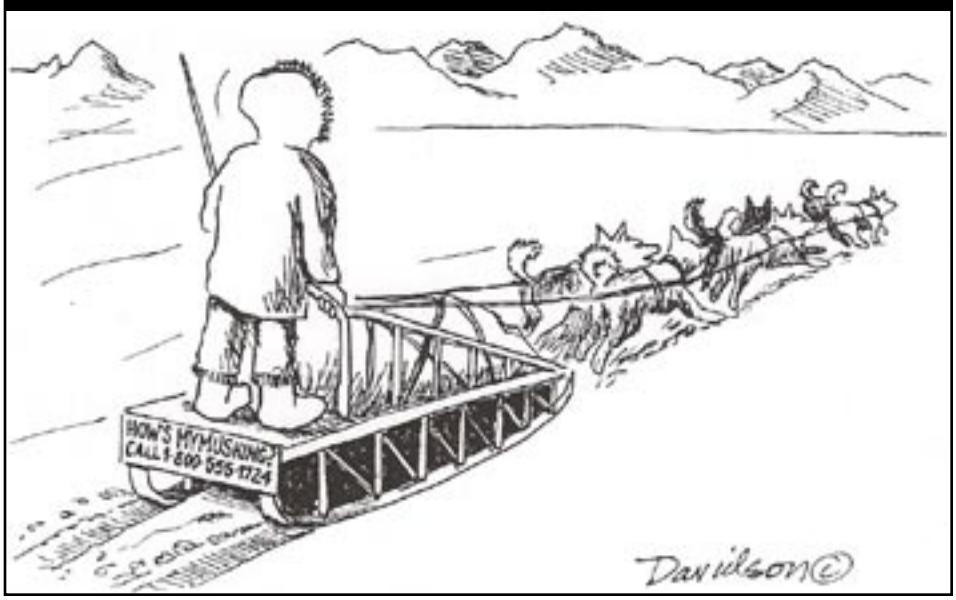
Level 1 Comix **Matt Davidson**



Editor's note: *We know there are no dogs allowed in Antarctica any more, but one must allow for some artistic latitude. Permits were still issued for sled dogs until the 1986-1987 austral summer, almost 10 years after the Antarctic Conservation Act of 1978 went into effect.*

Helpful Polies keep busy during delay

By Steven Profaizer
Staff writer

Lengthy delays on connecting flights are hardly uncommon.

But have you ever seen a stranded passenger lend a hand to the airport janitors by mopping the floors or help the restaurant workers by scrubbing pots?

U.S. Antarctic Program participants en route to the South Pole did just that during their 10-day weather delay in McMurdo Station. Many Polies helped out by showing up to work regular hours and complete training alongside their McMurdo counterparts. But South Pole workers whose jobs were not translatable just chipped in wherever they saw a need.

"I kind of feel like we're guests staying longer than invited, so it's my way of saying 'thanks,'" said Leah Webster, a South Pole dining assistant who volunteered in the dish room during her time in McMurdo. "Since I can't get on a plane and go to the South Pole, it's the next best thing I can do."

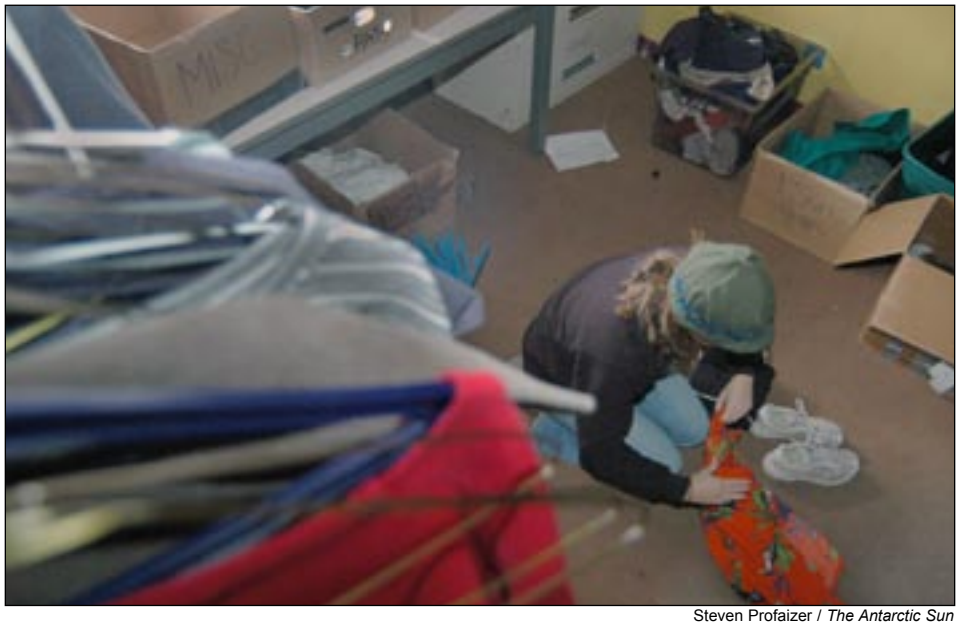
Polies could be found helping in a wide variety of ways, such as building pallets of cargo, repairing tents, shoveling snow and helping out in one of the departments most taxed by having a backlog of extra people on station — the dining hall.

"They've been in the bakery, in the dish room, in the pot room and in the kitchen," said Sally Ayotte, McMurdo executive chef. "In addition [to the South Pole food services staff], I've seen all kind of South Pole community members in here. I've seen IceCube folks, weather folks, cargo folks. They've all been helping."

The first four flights of the summer carried 109 passengers and arrived at Amundsen-Scott South Pole Station on Oct. 31. Serendipitously, this date coincided with the 50th anniversary of the first flight to land at Pole, and the first flight of the season was dedicated as a commemorative flight to mark the occasion. (See related story on page 1.)

This provided much-needed relief to McMurdo's bursting seams. With no place for the Polies to go and more flights coming in as scheduled, the station had swollen to within 15 people of its 1,100-person population cap.

Polies had to be stuffed into whatever available space could be found around McMurdo. Some of the more unfortunate males were crammed into a 28-person, claustrophobia-inducing bunk room in Hotel California, one of the station's dorms. The room was dubbed "Man Camp" by its inhabitants, many of whom lived there for three weeks during their time in McMurdo.



Steven Profaizer / *The Antarctic Sun*

Michelle Belacic / Special to *The Antarctic Sun*

Steven Profaizer / *The Antarctic Sun*

Top: Cathy Morrell, South Pole fuels operator, searches through McMurdo's Skua Central for clothes to wear. Polies' luggage remained on pallets through most of the 10-day delay.

Above: Flight notices alert Polies of the most recent weather cancellations on Oct. 27.

Left: Jake Cerese, South Pole baker, lends a hand in the McMurdo kitchen.

Passenger flights to McMurdo from Christchurch, New Zealand, had to be suspended until the first flights to Pole left and made space available, said Bill Turnbull, Antarctic Terminal Operations manager. Fortunately, only one plane was affected before the South Pole flights left and the hold was lifted on the 104 in-bound passengers.

The 10-day delay marks the second longest postponement of the South Pole's opening in more than a decade, according to research extending back to 1992 by Ray Gabriel, USAP transportation planner.

The longest delay belongs to the summer season of 1997-1998, when weather conditions kept the new crew from reaching the South Pole station for 12 days. The first flight of that year was scheduled for Oct. 27 and arrived Nov. 8.

This season, extreme cold temperatures at Pole were to blame for the delay of flights to the South Pole station. The New York Air National Guard will not fly the Hercules LC-130 aircraft in temperatures colder than negative 50 degrees Celsius because of the havoc it wreaks on the planes and the resulting safety concerns.

"We have very strict guidelines for landing at temperatures below negative 50 degrees Celsius," said Maj. Joe DeConno, supervisor of LC-130 flights last week. "It's mainly because of the temperature's effect on the hydraulic fluids performance, limitations on the fuel, and other mainte-

See WEATHER on page 6

Perspectives

Antarctic night shines bright with experiences

By Rebecca Crane
Special to the Sun

"Remember, don't *touch* any of them!" "I'm not even getting *near* them. No way am I catching the Crud!"

The six of us, all first-time winterovers, were crowded around the dining hall window. For the first time in many months, a plane had just landed on our continent, bringing fresh food, new faces and foreign germs. We had been quietly eating breakfast, trying to appear blasé about the first flight. After all, we were veteran winterovers now — tough, respectably surly types inured to the surreal novelties of life on the Seventh Continent. At least we were until the first moment newcomers trundled into view, swaddled in their Big Red parkas. Suddenly, we were fascinated, jostling and pointing excitedly through the glass.

"Hey! Is that so-and-so?"

"I can't make anyone out under all those hats!"

"Wow, I didn't know he was coming back. Look, he shaved!"

"Don't these people know it's *warm* out today?"

I hadn't intended to winter. I had come to McMurdo Station the previous summer as a janitor. Having recently graduated college, I'd wanted to "do something different." Scrubbing stairwells in Antarctica definitely fit the bill (not to mention giving me a clever answer to, "So, what do you do with a degree in philosophy?"). I was only meant to be on the Ice for a few months, but I'd known early on that I was hooked. I set out to find a winter job, pass the psychological screening, convince my bank that, yes, I was really in Antarctica, and break the news to my family that I loved and missed them but wouldn't be home for another six months — and would they mind sending some extra wool socks?

Since the days of sled dogs and frozen seal meat, wintering over in the Antarctic has had a certain ominous mystique. The long, icy darkness is rumored to have strange effects on the mind and body. With so little experience on Ice — only one short, sunny summer — I wondered if I'd be able to handle it. But I'd come here to see Antarctica, and I knew that Antarctica still had more to show me.

So I wintered, as the Heavy Shop's general assistant, and discovered that the rumors were true. It was dark, and it was cold. My skin turned so pale, even my freckles disappeared. As the pace of life became slower, quieter, more methodical, my thoughts and actions followed suit. I began to consider "a whole hoard of people" to be any gathering larger than four. I gave up shaving my legs (although I did shave my head) — but this was nothing compared to the massive, grizzly beards grown by some of the razor-shunning men.

There were sleepless nights, vivid dreams, bouts of depression, grumpiness, loneliness, giddiness, exhaustion, epiphany, and at times, folks — myself included — just got *weird*. We also got "toasty," staring off into space and suffering short-term memory loss. It took me 20 minutes one morning to remember that "the thing ... ya know ... where they keep all the switches?" was called a fuse box. And while the kitchen crew worked culinary miracles given their limited resources, there came a point when I craved just the *smell* of a fresh orange.

Dan McCloskey / Special to *The Antarctic Sun*

Rebecca Crane at the Scott Base "Space Heroes and Alien Invaders" party. Crane decided to winter after spending her first summer at McMurdo Station as a janitor.

People have been wintering for more than 100 years. A few I met this season had done five or 10 winters themselves. Humans are ingenious and adaptive, so in all that time, they'd figured out a few tricks.

When it got dark, the community built a "sun room" with full-spectrum lighting, bright colors, running water, "Sounds of Birdsong" on the stereo, even a few precious growing greenhouse plants. It was my favorite place to curl up and read on those blustery negative-30-degree days.

As for the cold, my extreme cold weather gear kept me pretty snug, but I was surprised how well my body adapted on its own. I remembered feeling, when I first stepped off the plane, as if my eyeballs were going to freeze, but by Midwinter, any temperature felt pleasant as long as it wasn't windy.

There was nothing to be done about the lack of fresh fruits and vegetables, but we did have a phenomenal baker and fresh bread every day. The mechanics all sent a letter to Christina the baker's mom thanking her for the handed-down cookie recipes that kept them going in the cold (and warmly insulated with extra blubber). And for every feeling of isolation and being far from home, there were memorable moments of warmth and intimacy shared by our 203-person town.

Meanwhile, the station kept running. People did their jobs, science got supported, friendships were forged, and above it all, Antarctic stars continued to shine brighter and clearer than any I'd ever seen. And after 170 days cut off from the outside world, my anticipation of the first flight rivaled childhood nights before Christmas.

My resolve to avoid the crud-carrying newcomers lasted about two minutes. Then I saw a returning friend from last summer among the red coat crowd. I jumped up and gave him a hug. He laughed and gave me an orange.

around the continent

SOUTH POLE

Summer arrives at South Pole

By Tom Lohr
South Pole correspondent

Temperatures warmed above the line of demarcation for safe flying Tuesday (negative 50 degrees Celsius). And to the glee of a marooned winter crew the New York Air National Guard delivered nearly 100 eager new Polies.

And yes, they brought bananas. For a good hour after the first arrival of crew and cargo, the most dangerous place to be on Earth was between a winterover and the boxes of fresh fruit. No injuries were reported.

Arriving 10 days later than planned for the summer season, the new crew has been hustling to fill the shoes of the rapidly disappearing winterovers. Many turnovers have been compacted from a three- or four-day transition for some into one or two days. Emergency response teams surveyed their gear on Wednesday and started training Thursday.

The bristling new station is chock-a-block with Polies settling into their new digs, and the historic summer camp is filling up quickly. Even some with years of ice time are insisting on a bunk in a tent-like building, unable to shake the rustic lure of roughing it at the Pole. Others are plugging into the Internet portal in their private room in the new Elevated Station.

Pushing mountains of drifted snow is part of the early operations, one of the more mundane but important yearly tasks that clears the tons of accumulated ice crystals around many buildings. And the endless stream of cargo has already begun to hit the skiway, with flights arriving until late in the evening.

Through the flurry of meetings and orientations that are required to kick start the season, Polies are getting grounded and enthusiastic about this summer's exciting new projects. Despite losing time, including a Sunday devoted to acclimatizing to South Pole's high altitude, hammers are swinging, cargo is moving, data are being collected and cutting-edge science is about to move into high gear. The South Pole summer season has begun.

Ethan Dicks / Special to *The Antarctic Sun*

Liesl Schernthanner directs the first flight of summer as it moves along the South Pole skiway Oct. 31. The aircraft was the first of four that day bringing the season's first supplies and personnel to the station after a 10-day weather delay in McMurdo. (See related story on page 3.)

PALMER

A week of mixed weather

By Kerry Kells
Palmer correspondent

The past week included fluctuations in winds, snow and open water.

High winds led to calm conditions, followed by snow, which led to drifting ice enclosing Palmer Station. Then the sunshine returned only to be followed by high winds and sleet. The Ocean Search and Rescue (OSAR) and Glacier Search and Rescue teams also started training this week. And sea water sampling continued when the sea ice opened and the winds lessened.

Andy Young, the Power/Water supervisor and a mechanic at Palmer Station, gave a presentation about the research occurring in other parts of the continent where he has worked. Andy showed photos of McMurdo, field camps in the ice-free Dry Valleys and the Mount Erebus Volcano Observatory. He also showed photos from when he assisted in the Long Duration Balloon instrument payload retrieval from Dome Fuji, approximately 700 miles from the South Pole, considered one of the most remote places on the continent.

Updates from the Palmer field include reports from the seabird research group (the birders) on Adélie penguin censuses for the islands of Torgersen, Humble, Litchfield, Cormorant and Christine.

See CONTINENT on page 6

the week in weather

McMurdo Station
High: 16F / -9C
Low: -8F / -22C
Max. sustained wind: 29 mph / 46 kph
Min. wind chill: -33F / -36C

Palmer Station
High temperature: 38F / 3C
Low temperature: 27F / -3C
Max. sustained wind: 53 mph / 86 kph
Melted precipitation: 25mm

South Pole Station
High: -41F / -40C
Low: -75F / -59C
Peak wind: 21 mph / 34 kph
Max. Physio-altitude: 3,408 m

Weather allows first flights to Pole after 10 days

From page 3

nance considerations that could prevent us from being able to get off the ground again."

Other weather conditions at both the South Pole and McMurdo are also major concerns. This is especially true on the first flight of each season when the Guard requires three miles of visibility around the South Pole station as compared to the one mile it typically demands.

"Before we attempt an approach in marginal weather conditions, we need to make sure there are no changes to the skiway as compared to last year," said DeConno.

One of the things the crew looks for is confirmation that the radar signals received from the ground correlate with what it sees visually. Navigators use the radar signals to detect the flags lining the skiway. They then use that data to line up their landing in less than ideal weather conditions.

It took 10 extra days, but the weather did eventually allow the summer season to begin at the South Pole. In the meantime, the Polies grounded in McMurdo tried to make the best of the situation by helping out and enjoying the perks of McMurdo.

"People tried to take advantage of the fact that it's much warmer here — you can go skiing and there are places like the Coffee House," said BK Grant, South Pole station manager. "There's a lot of stuff that they appreciated having the time to do, but we also knew that there's a ton of work that we have to do at Pole."

Michelle Belacic, Pole dining assistant, contributed to this story.

Continent

From page 5

The birders visit all of these islands for research during the austral summer months when they are easily accessible by Zodiac boat.

The Adélies have started breeding and will start to lay eggs about the second week in November. Cormorant populations are counted on Cormorant Island every five days and with less frequency at Elephant Rocks (a group of rocks just north of Palmer and popular with elephant seals). A few gentoo and chinstrap penguins have also been spotted on some islands, while a fur seal has made an early appearance on Torgersen Island. Sampling continued at Station B and Station E last week by the phytoplankton and biogeochemical groups.

Palmer celebrated Halloween on Saturday night with a selection of creative costumes. The pageantry included a walking TerraLab, Wesley and Princess Buttercup from "The Princess Bride," a Guy Fawkes-masked V from the movie "V for Vendetta," and the rock group KISS reunited for Palmer Station.

The following day was spectacularly warm with bright sunshine, just in time for a day of boating to Old Palmer and walks up the glacier. Soon, we will welcome the arrival of the *Laurence M. Gould* and returning Principal Investigator Langdon Quetin with team member Kelly Moore.

SHIPS

LMG

Compiled from reports by Eric Hutt
Marine Projects coordinator

The *Laurence M. Gould* left Punta Arenas, Chile, on Oct. 28 southbound for the Drake Passage and the Antarctic Peninsula. Its first stop was to put a camp in at Cape Shirreff. Halloween found the *LMG* waiting for rough seas to abate so it could safely establish the camp. The seas calmed enough by the following day to allow the crew to put the camp in. The vessel is now en route to Palmer Station.

NBP

Compiled from reports
by Harold "Skip" Owen
Marine Projects coordinator

The *Nathaniel B. Palmer* left port from Lyttleton, New Zealand, Nov. 1 for its next science cruise. The cruise includes a number of scientists involved in CORSACS – Controls on Ross Sea Algal Community Structure. CORSACS will investigate the interactive effects of iron, carbon dioxide and light levels in the Ross Sea on phytoplankton community structure and biogeochemical cycling of various elements, especially carbon, sulfur, iron and cobalt.

The *NBP* is bound for the Ross Sea polynya, an area of open water in the sea ice. The plan is to conduct a test of all ship systems before reaching the ice edge. The vessel should reach the ice edge by Nov. 6.

Continental Drift

What is the best contribution of the work in Antarctica?

Matt Marchal, McMurdo carpenter from Missoula, Mont., first season

"It keeps people like us out of society, and that ain't bad."

Hugh Ducklow, principal investigator for the Palmer LTER site from Williamsburg, Va., ninth season

"The creation of Antarctica as a continent devoted to peaceful, non-exploiting uses and with no sovereign government by the Antarctic Treaty."

Nicolas Michel-Hart, South Pole cryogenic technician from Bow, Wash., first season

"When we come here to work, people back home don't have to deal with us for a while. I think that is a great gift we give our families."

Into the Forbidden Zone

Arrival Heights home to sensitive experiments

By Steve Martaindale
Sun Staff

By the time even the newest McMurdo Station residents are dragging luggage to their dorm rooms, they have heard about Arrival Heights. They may not know what it is, but they do know it is off-limits.

Why? Is it like the forbidden fruit in the Garden of Eden? Will trespassing there set off an international incident? Will it kill me?

"We're not trying to be nasty or anything," assures research associate Steve Dobbs, whose job entails daily trips into the forbidden zone. Like so many rules in Antarctica, the area is designated off-limits in the interest of science.

Arrival Heights sits at a higher elevation than McMurdo. It is barely a kilometer from station, yet the terrain shelters it from both McMurdo and Scott Base. That is part of what makes the location special.

Indeed, it was awarded special protection in 1975 after a proposal by the United States on the grounds that it was "an electromagnetic and natural 'quiet site' offering ideal conditions for the installation of sensitive instruments for recording minute signals associated with upper atmosphere programs."

The site is now designated Antarctic Specially Protected Area No. 122 by the Scientific Committee on Antarctic Research, an inter-disciplinary committee of the International Council for Science. At the committee's spring 2004 meeting, it recognized that the site would benefit from continued protection.

Quietness, Dobbs explains, covers more than noise abatement. The experiments there "either require electromagnetic quietness, clean air or lack of light pollution."

An experiment that depends on air sampling, for example, would only run when the wind was from a prescribed direction, thus eliminating airborne materials from the two bases. Dobbs says another experiment in the low frequency ranges of the electromagnetic spectrum is trying to detect lightning strikes in the Northern Hemisphere.

Steve Martaindale / *The Antarctic Sun*

Research associate Steve Dobbs works in the Arrival Heights office last month. Dobbs makes daily trips to the area, which is generally off-limits to casual visits because of the sensitive science experiments conducted there.

"That's a very low intensity source," he says, "and you don't want to have somebody who's operating a radio transmitter because that would mess up the signal that you want."

Allan T. Weatherwax of Siena College is one of the researchers taking advantage of the site's quietness.

"The projects that operate from instrumentation at the Arrival Heights laboratory at McMurdo Station examine natural phenomena occurring in the Earth's atmosphere and magnetosphere," he says. His instruments are easily disturbed by mechanical and electrical noise and rely on the solitude there.

As special as Arrival Heights is, the current management plan for the area states that base operation and radio communication activities have degraded the "quiet" conditions to some degree, but it says conditions are good enough to deserve continued protection.

And that is where cooperation from McMurdo and Scott Base residents is important.

People are allowed on Arrival Heights, obviously, but only for specific and necessary reasons. Dobbs, for example, makes the short uphill drive to check on the equipment, look for problems, record data and back up files. Research assistants from Scott Base also monitor experiments.

The key, though, is that everyone who has a need to enter the site is trained on what to do and what not to do. Logs are maintained to keep researchers apprised of what is going on. If Dobbs must venture into the field among some of the antennas and sensors, his presence could give a researcher false readings. A check against the log would indicate the probable source of such data.

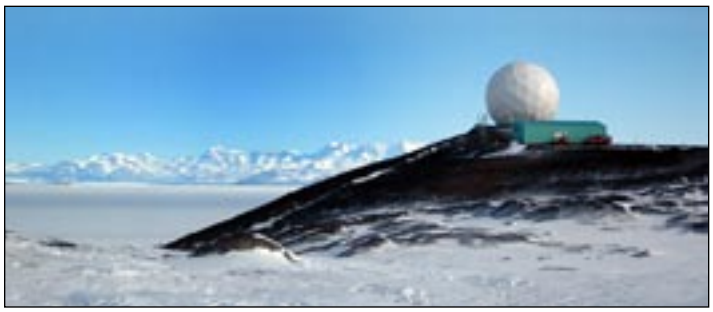
Guidelines dictate that researchers stay in designated areas and that they do not leave vehicles idling. A radio is to be operated only in the event of an emergency. Lights are not allowed, which means the associate must turn off the vehicle lights short of the site in the winter and drive the remaining distance in the dark.

Once Dobbs parks his pickup and plugs in the engine heater, he enters the American hut, the brain center for about half a dozen experiments he monitors. The main area is roomy enough and holds various tables and work spaces. However, one's eye is drawn to an L-shaped rack of monitors, displays and switches, steadily performing their automated tasks.

A small, adjacent room is equipped with a bed, a supply of food and a cooking utensil, just in case bad weather pins someone down.

Of course, it is the view from outside the hut that attracts the attention of most people, with distant mountain ranges and smoking Mount Erebus visible on the horizon.

"If you want to see [the view] take the Castle Rock Loop," Dobbs says.



Elaine Hood / Special to *The Antarctic Sun*

The experiments at Arrival Heights generally require electromagnetic quietness, clean air or lack of light pollution. The site is designated an Antarctic Specially Protected Area.

1956 flight ended race to South Pole

From Page 1

banner of the United States nor the Soviet Union, two superpowers struggling for dominance everywhere from deep seas to outer space.

Looking back 50 years after winning the race south, Shinn says today that he was told getting to the South Pole was a priority for the very reason that the United States wanted to set up camp before its rival did so.

"Admiral [George S.] Dufek made a talk sometime after we got to McMurdo and said that we had to get up there [to the South Pole] quickly because he thought the Russians would pre-empt us," Shinn said from his home in Pensacola, Fla. "He never discussed it with us other than that. There was no pre-planning. As far as that goes, he wanted to go to the Pole, so we went."

He said the men who worked to build the stations in Antarctica never got the recognition they deserved.

"Everybody was watching the Hungarian uprising and nobody paid much attention to what was going on in the Antarctic," Shinn said.

Fifty years after the first airplane landed at the Pole, Shinn still retells his story, though it seems he would just as soon have his questioner learn about it from a book. On numerous occasions, he insists he was merely doing his job, along with other men, and he gives much of the credit to good luck. He quickly sheds mention of honors, such as the naming of Antarctica's third-highest mountain, Mount Shinn.

"I never paid any attention to any of that stuff. In retrospect, I realize that I was strictly focused on the job at hand and I did my best to do it safely and on time. And I was lucky. I didn't have any significant incidents or any engine failures, which were quite numerous down there. I was lucky and everybody was happy."

'Your crew is going'

In the wee hours of Oct. 31, 1956, word was sent down that the Pole flight would take off at 8 a.m. Other pilots wanted the mission, but Shinn said he did not really think about the admiral's decision.

"He just said, 'Your crew is going,' and I said, 'OK, fine; it's not a problem.'"

Shinn said his crew normally consisted of co-pilot Capt. Douglas Cordinor, navigator Lt. John R. Swadener, crew chief John P. Strider and radioman William A. Cumbie Jr. However, Dufek put Capt. William "Trigger" Hawkes into the copilot's seat while the admiral and Cordinor flew as observers.

Dian Olson Belanger's new book, "Deep Freeze," says that Hawkes, in light of his experience and qualifications, was Dufek's original choice to pilot the flight but that Hawkes yielded to the younger Shinn and opted to fill the co-pilot's seat.

Image provided by National Science Foundation / Special to *The Antarctic Sun*

This painting of the first landing at the South Pole will be displayed at the new South Pole station. It is autographed by Lt. Cmdr. Conrad "Gus" Shinn, the pilot who made the landing 50 years ago.

The flight to the Pole itself was not much different from other flights, Shinn said. What set it apart was the landing itself and the fact nobody really knew what the conditions were.

> "We didn't really know what the surface was and how much we'd sink in, if any. We didn't know the nature of the surface and didn't know how easy it would be to take off."
>
> *— Gus Shinn*
> *First pilot to land at South Pole*

"We had a lot of unknown unknowns," Shinn said. "We didn't really know what the surface was and how much we'd sink in, if any. We didn't know the nature of the surface and didn't know how easy it would be to take off."

All they knew about conditions was that they were CAVU — ceiling and visibility unlimited. Among the things they did not know was if the airplane would continue to operate after sitting in South Pole temperatures, if the hydraulics would work and if the plane would leak fluids.

After circling the area to pinpoint the location of the Pole, Shinn landed the plane atop moderately rough sastrugi (wavelike ridges of hard snow) without incident and kept the engines running. He said the seven men climbed out into temperatures of minus 51 Celsius (-60 F) to plant an American flag and take photos. In less than 50 minutes, they were boarding the "Que Sera Sera" to return to McMurdo.

Hopes for an easy takeoff were quickly dashed as they found the plane's skis frozen to the ice and the craft unable to taxi. It was equipped with 15 JATO (jet-assisted takeoff) bottles, essentially rockets fastened to the plane to provide additional thrust in 30-second burns to assist a plane during takeoff. He fired them off four at a time until the plane broke free. He used the final three bottles to help the craft clear

See SHINN on page 11

Pilots today benefit from work of pioneers

By Steve Martaindale
Sun staff

Thousands of kilometers and 18 time zones apart, Amundsen-Scott South Pole Station in Antarctica and the National Museum of Naval Aviation in Pensacola, Fla., came together on Oct. 31.

Both sites hosted ceremonies commemorating the 50th anniversary of the first airplane landing at the South Pole. Special guest at the Pensacola celebration was Navy Lt. Cmdr. Conrad "Gus" Shinn, pilot of the airplane whose safe landing and takeoff at the Pole paved the way for a permanent presence there by the United States.

Providing additional fanfare to the South Pole ceremony was the fact that it also marked the first flight of this season, an event delayed 10 days by extreme weather.

Joining the first wave of summer workers on that flight were National Science Foundation representative Brian Stone and Air Force Col. Ronald Smith, commander of the Joint Task Force, Support Services Antarctica. Piloting the first flight of the season was Maj. Norman Carlyle. It landed at 11 a.m. and a short time later was en route back to McMurdo Station, the first of four airplanes to make the flight that day.

The final mission of the day was also significant to the anniversary. It was scheduled to land about the same time of the day as the 1956 flight. Its pilot, New York Air National Guard Lt. Col. Mark Doll, carried letters addressed to the two surviving crew members of that flight and other honorees. They were to be postmarked from the South Pole on the anniversary date.

Courtesy of Mark Doll / Special to *The Antarctic Sun*

Fifty years, to the minute, after the first airplane landed at the South Pole, this crew set down on Oct. 31. From left to right are 1st Lt. Brian Shad, Lt. Col. Marc LeCours, Sgt. Justin Taylor, Sgt. Tim Putman, Master Sgt. Joe Thorpe, 1st Lt. Dan Urband and Lt. Col. Mark Doll.

Flight to the past

As Doll prepared for his first flight of the season to the South Pole, one of dozens he is likely to make during the next few weeks, he tried to put himself into the seat of the "Que Sera Sera," a U.S. Navy R4D skied aircraft, which made the first landing at 90 degrees south exactly 50 years prior.

"I think there had to be a strong sense of the challenge of getting this accomplished," Doll said of Gus Shinn while sipping coffee in the McMurdo Station dining facility.

"I don't think the pilot's attitude would have been one of adventure, not one of delight, but one of a deep challenge and a sense of commitment to make sure that this goes off well. … That was probably his overriding thought during the course of the whole mission, to see that this thing went off without a hitch."

History shows that the first landing at the South Pole, on Oct. 31, 1956, had a hitch or two but nothing the pilot and crew were not able to overcome.

Doll is particularly qualified to address the topic, not only because of a longtime interest in the history of polar aviation but also due to the scores of landings he has made at the South Pole. This is his 10th Antarctic tour in the past 11 seasons, making up to six flights per week for the 10-week duration of his stay.

Indeed, it would be easy to assume landing at the Pole has become routine with 372 flights scheduled this season, but Doll says the extreme conditions are still a challenge to both man and machine.

Just like Shinn did in 1956, pilots today keep the engines running while on the ground at the South Pole. That means workers must deal with propeller blast in addition to normal winds and temperatures well below zero.

For Doll's LC-130, a cargo plane capable of landing on skis, the challenges of cold weather can include fuel that may gel a bit, sluggish hydraulics on the skis and "cold controls." He said the engines have trouble maintaining temperature and their seals can start leaking fluids.

Advances in technology during the past 50 years have made many aspects of the journey safer, but they have done little to make airplanes better capable of operating at such low temperatures. The threshold for flying to the Pole is minus 50 degrees Celsius, roughly the same temperature Shinn and his crew found when they landed.

Doll said pilots today benefit from the experiences of Shinn and other pilots since him.

"We have the knowledge that it's a routine flight, done many times over," he said. All the LC-130 flights are handled by the 109th Airlift Wing of the New York Air National Guard. "It's a prepared skiway, so it's not really the adventure it used to be."

There is also a better safety net today, he said, with a support structure that can usually respond to trouble in a matter of hours.

A support system existed in 1956, too, but Shinn said the extreme conditions exacted a price.

"If you read the record of the accidents we had down there," Shinn said in an earlier interview, "I think we had more accidents than any other Navy squadron for a couple of years. … [We were] losing aircraft all over and we were real lucky we didn't lose a lot of people. We lost some, but not a lot, considering what we were doing."

Right on time

Doll's own flight through history left McMurdo much later in the day than Shinn's. The original flight took about seven and a half hours while today's takes only about three.

"On the approach," Doll said of his anniversary run, "it was busy because the weather wasn't the best and I had a new co-pilot in the right seat who had never been there before. It was busy, but I did stop and reflect on what I saw out there — a very well-developed station. … When they first went out there, there was absolutely nothing. It was flat white to the horizon everywhere."

On the final stretch of the trip, Doll said that he saw they would be close to the target time of 8:34 Greenwich Mean Time (9:34 p.m. local), "so I started playing with the speed a little bit just to make sure we got as close as we could and ended up landing five seconds early."

Altitude study finds Pole to be perfect laboratory

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and Engineering Center, where the team is screening patients in a small lab room adjacent to the aquarium.

The group is hoping to recruit 150 people for this year's field season, with the goal of capturing statistics and data on 300 individuals during the team's two deploying seasons.

Johnson said the South Pole serves as an ideal laboratory for this kind of study for several reasons. At approximately 2,800 meters, the Pole represents a moderately high altitude where many people may reasonably travel or live as opposed to extreme Mount Everest-type heights. People traveling to Pole represent a broad but very healthy cross-section of people in terms of demographics and physiology rather than a sub-group of elite climbers.

In addition, people en route to the bottom of the world start at the same baseline, as they travel through Christchurch, New Zealand, and on to McMurdo Station, which are both at sea level.

"What's unique about the South Pole, about the Antarctic, is that it's a very structured population," Johnson said. "It's kind of a unique laboratory setting here."

And what is unique about going to altitude at Pole is the climb itself. Most people arrive at 90 degrees south on a U.S. Air National Guard LC-130 ski-equipped plane, rocketing to elevation in the course of about three hours.

While the physical altitude of the South Pole is 2,800 meters, a couple of factors can change the equation dramatically. At the South Pole, the barometric air pressure averages about 20 percent lower than expected for that elevation. Atmospheric pressure is the weight of the overlying air column. As altitude increases, pressure decreases. Under less pressure, oxygen molecules are more widely dispersed throughout the atmosphere, making the air feel thinner. Cold only exacerbates the process, meaning greater variability in what's called physiological altitude as pressure drops, particularly during the cold winter months.

The physiological altitude at Pole can typically hit 3,500 meters and has gone as high as about 3,783 meters. (For a more detailed explanation of physiological altitude, see the Feb. 2, 2003, issue of *The Antarctic Sun* at antarcticsun.usap.gov.)

Aside from having to adapt to the physiological shifts in altitude, many Polies hit the ground running to squeeze every working minute possible out of the relatively short austral summer season, which generally lasts from late October to early February.

Peter Rejcek / *The Antarctic Sun*

Research physiologist Andy Miller administers a pulmonary function test using a spirometer to Red Mathieson late last month in a lab adjacent to the aquarium in the Crary Science and Engineering Center.

"We do know how quickly you go to altitude does play a role in the symptoms [of altitude illness]," Johnson said. "We're trying to quantify does cold play a role, does activity play a major role."

The team has already recruited about 120 volunteers. Amnesty Kochanowski, a South Pole air cargo handler on her second season, said that as an outdoor person who regularly hikes at altitude she was eager to participate in the study.

"Living high in Colorado and climbing high in the mountains, I've seen how [altitude] affects people," said Kochanowski, from Grand Lake near Rocky Mountain National Park. "I wanted to be sure I was involved."

Some South Pole stats

Mild symptoms of altitude illness include headache, fatigue, shortness of breath, nausea, lack of appetite and lightheadedness. More severe cases can result in High Altitude Cerebral Edema (HACE), which causes swelling of the brain due to fluid leakage, and High Altitude Pulmonary Edema (HAPE), which involves fluid leaking into the lungs and impairing the transfer of oxygen to the blood stream.

Dr. Will Silva served as the South Pole physician for the last year and has done a total of three full years at the station. Last summer, he said, was a mild year for altitude illness, with the clinic recording only a dozen visits and one case of HAPE. Normally, the clinic averages 20-plus cases of altitude sickness during the summer.

"I suspect a growing awareness on the part of veteran managers of the need to go easy on people for the first couple days, plus our opening on Saturdays several seasons running (so people get a rest day), plays a role here," Silva wrote in an e-mail, explaining last year's decline in clinic visits.

Serious cases of HAPE or HACE do periodically occur at the South Pole, according to Silva, and require immediate evacuation back down to sea level. In 2002, he sent three patients back to McMurdo, one of whom was deteriorating with cerebral edema. Silva stressed that low-level activity is key to successful acclimatization.

"Once again, the most important thing is to do as much nothing as possible the first two days," he noted. "Vigorous exercise before acclimatization is a major risk factor for HAPE, which can be rapidly fatal if untreated."

To quantify that factor and others, the ASAP team performs a series of tests

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Lt. Com. Conrad "Gus" Shinn

Shinn looks back 50 years

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the surface in the thin air at an elevation of 2,835 meters.

Shinn and his crew proved it possible to land at the South Pole and take off again. With that confirmation, further trips delivering men and cargo began on Nov. 19, with Navy Seabees unloading in the prop blasts as the pilots stayed ready to take off at the earliest moment. Much of the cargo was delivered by air drop.

If the purpose of Shinn's mission was to learn, what was the greatest lesson?

"The main thing was, don't go down when it's minus 60 [degrees Fahrenheit]," he said. "That was too cold for the equipment. At that temperature, the snow or the ice was more like sand. You're not able to taxi [in such thin air]. … Once we learned how to do it and once the temperature got up to minus 40, it wasn't a real big deal."

In fact, he said, some flights were able to make the round trip without refueling. When necessary, refueling was achieved at a site established at the foot of the Beardmore Glacier.

Shinn made numerous flights to the Pole, he said, but he's not sure how many.

Today, he is retired in Pensacola. At 84, he said he's taking life easy while enjoying the company of a clutter of cats and a small dog.

"I asked Admiral Dufek what he was doing in 1975 and he said, 'raising roses,' and I thought that was pretty funny. And I guess if I told him right now that I had a bunch of cats, he would think it was funny."

Researchers looking into altitude's effect on sleep

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before subjects leave McMurdo. Each person fills out a questionnaire that captures basic medical history and general activity level, along with information regarding such things as previous trips to Pole and whether someone has a history of motion or carsickness.

ASAP staff members then draw blood and perform several physiological tests to determine such things as lung function and capacity and oxygen saturation — the percentage of arterial hemoglobin saturated with oxygen. Subjects continue to fill out daily symptoms worksheets for seven days after reaching the South Pole.

"What we're trying to get at is if [subjects] have symptoms, how severe they are and try to relate that back to their blood work, function test, genetics, to how well they're sleeping, how much their activity is," explained Maile Ceridon, a Mayo graduate student working with the ASAP team. "We've got a number of things we're trying to do comparisons on."

The medical team will collect additional information about sleep habits and activity levels from a smaller group, about 50 subjects, using Vivometric LifeShirts and BodyMedia activity monitors.

The shirts monitor an array of physiological responses during sleep, such as rapid eye movement, or REM, and brain activity. The sleeveless black vest also has a voice recorder to tape snoring noises. There is some evidence, Johnson said, that people who snore or have sleep apnea may be more prone to altitude illness. Subjects wear the shirts one night while in McMurdo and then during their first night at South Pole to determine how the sudden increase in altitude may affect sleep.

Sleep may play an important role in acclimatization because a person's ability to adapt early to altitude relies mainly on breathing, which increases to compensate for the lower partial pressure of oxygen at higher elevations. During sleep, a person naturally breathes slower; someone with difficulties, such as apnea, will have periods where the arterial oxygen levels in the blood will drop, which becomes even more prominent at altitude.

Silva said that new arrivals at South Pole usually have an oxygen saturation of about 87 to 89 percent (at sea level, saturation is normally at 97 to 99 percent). Individuals struggling to acclimate can drop into the low to mid 80s.

"In contrast, those with HAPE have audible pulmonary congestion with rales (crackles) and sometimes a little wheezing, and O_2 [saturation] in the high 60s to mid 70s by the time they arrive in Medical, and are often coughing up a little pink froth," he wrote from Pole.

Although HAPE cases occur, what Johnson says are "life-threatening maladaptations" to altitude affect relatively few people at South Pole. "Our laboratory has evidence that there are likely much more subtle changes in lung fluid balance in a larger percentage of people going to altitude than previously appreciated," he said.

The other device the group is using is a BodyMedia activity monitor, which is worn around the upper arm. The unit possesses a number of bells and whistles, such as an accelerometer that detects movement in any direction and a galvanometer that measures skin temperature. The device is able to work out the metabolic rate and tell the researchers the kinds of activities a person is doing, from walking to running to standing still.

"It does a very good job at quantifying what we are doing," Johnson said.

The bigger picture

By identifying people who get various strains of altitude illness and matching that data with their physiological, chemical and genetic profiles, researchers may be able isolate certain markers that pre-dispose people to altitude sickness.

"Physicians could use that algorithm and tell people if you have this background you need to spend more time at moderate altitudes adapting or you need to be less active when you go to altitude … or take medication," Johnson said.

Interests in this type of research go well beyond altitude studies, according to Johnson. Agencies like NASA could use the data to calculate ideal pressurization for long-term spaceflights. The study also has implications for research on heart and lung diseases, which share some of the same pathology as altitude illness, particularly concerning low oxygen levels and constriction of blood vessels in the lungs.

"There is a lot of synergy between disease and humans trying to adapt to high altitude," Johnson said.

NSF-funded research in this story: Dr. Bruce Johnson, Mayo Clinic, mayo research.mayo.edu/mayo/research/asap/.

Profile Something better every day

By Steve Martaindale
Sun Staff

Trace the whirlwind that has been Jared Sibbitt's life the past 2½ years and it may have all started when he realized Cuba was only about "a half-inch on the map from the Bahamas."

Sibbitt has since provided tsunami relief aid in Sri Lanka, been an observer for human rights in Haiti and is now a janitor at McMurdo Station in Antarctica. Oh, yes, he also teaches salsa dancing.

They may seem disjointed, but each stage of his journey fits into his personal philosophy to make something better every day.

His interest in Antarctica dates back to his childhood in Alaska and a friend's brother who spent several seasons at McMurdo as a firefighter. Eventually, Sibbitt became a wildland firefighter while attending college at Northern Arizona University. He, too, applied for a job on the Ice, but not as a firefighter.

"When I did fire, I did wildland, and there are not nearly enough trees to burn down here. The way I fight fires, I dig a line with a tool and burn out, but you can't really dig a line down the middle of the galley and back burn."

The 25-year-old Flagstaff resident did fall back on his fire fighting experience to land the janitor job, however, pointing out that he spent his down time cleaning the fire station.

Shortly after college in 2004 and finishing his third consecutive season as a firefighter, Sibbitt treated himself to a trip to the Bahamas, partly because he was able to buy an inexpensive ticket online. Since Cuba was so close, he decided to fly to Havana.

"That was my first big trip out of the country and it opened my eyes a little bit," Sibbitt said after spending the day cleaning buildings at McMurdo.

He had been planning a trip to Guatemala to meet friends he made on his first journey when the events of Dec. 26, 2004, captured the world's attention.

One of the most powerful earthquakes on record struck in the Indian Ocean off the west coast of Sumatra, Indonesia. Sliding plates of the earth's crust underneath the ocean displaced tremendous volumes of water, setting off tsunamis that affected most of the coast of the Indian Ocean.

According to the United Nations, 186,983 people were killed and 42,883 others are still missing. In the island nation of Sri Lanka, which sits east of the southern tip of India, 35,322 people died. As nations and non-governmental organizations rallied to offer relief to the more than 1 million displaced people, non-attached relief help was discouraged.

Steve Martaindale / *The Antarctic Sun*

Jared Sibbitt and dance partner Lisa Purvis exhibit their moves during the salsa dance class Sibbitt teaches at McMurdo Station. He says he considers dancing to be like any other skill — people are not born dancers but can learn to be through practice.

However, Sibbitt said he and his best friend, Mattie, made connections with an orphanage in the southern Sri Lankan state of Galle and arrived there on Feb. 7, 2005. Any concerns they would not be useful were immediately dispelled.

"There was so much work to be done, you could just pick your project," he said. "You know: You want to work in the orphanage? Go here. You want to clean ditches? Go over here. You want to clean rubble? Go here. You want to build houses? Go there. There was so much going on that there was no reason to not be there."

The fact that he was committed to three and a half months made him a rather valuable commodity. He hooked up with Project Galle and, with hardly any other qualifications besides his commitment to stay, he was put in charge of building permanent housing. Many evenings, he also worked at the orphanage with Mattie.

"It is the hardest thing I have ever done," he said.

In January 2006, Sibbitt signed on with Hurah — Human Rights Accompaniment in Haiti — as an observer during a heated presidential election. When his group received word that a truckload of stolen ballots was being destroyed, he made photographs that were picked up by international media.

"Jared is an angel on the ground," wrote Hurah President Tom Luce via e-mail, "meaning he has an extremely rare combination of idealism and pragmatism for his own survival, as well as with those he is serving."

Sibbitt, who is usually spotted around station wearing a Hawaiian shirt, admitted that working in Antarctica may not offer the opportunity to affect people as dramatically as in Sri Lanka or Haiti, but he still has a mission.

Salsa.

A "cute gal who was a salsa instructor" convinced him to take lessons sometime back. Even though he stepped on his partners' feet and "sometimes other people's partners' feet," he stuck with it, partly because of the instructor and partly because he said it is addictive.

Teaching the Monday class not only gives others a chance to learn a new skill but also assures he has dancing partners.

And the whirlwind continues.