

## Lautenbacher Is Sworn in as NOAA Administrator



Ronald Bell/DOC

Deputy Secretary of Commerce Sam Bodman (left) and Secretary Don Evans (right) congratulate Vice Adm. Conrad C. Lautenbacher, Jr., following his swearing in as NOAA Administrator Dec. 12.

## NOAA Scientists Fly Into Winter Storms to Improve Forecasts of Rain and Snow

—By Jana Goldman

Flying a winter research mission in one of NOAA's P-3 aircraft is often not as much of a visual experience as one might imagine.

"Many times you are flying in clouds, rain and snow. And in the Pacific Northwest in December, it is dark a lot. The windows are few and somewhat small. You are relying on the multitude of instrument panels to be your eyes. You feel a big bump and you wonder, 'Was that the updraft from the mountain wave? How strong was it?' So you look at your instrument panels and you find out how fast

the updraft was—a few meters per second. You look at the radar to see when you will be in the heaviest precipitation. You have really cool displays of images of the snowflakes—needles, dendrites, aggregates. You see supercooled water droplets. All of this through the sophisticated instruments that we have on the NOAA P-3, and not through the window."

That's how NOAA scientist Brad Colman, one of the principal researchers in a weather study in Oregon in December, described the experience.

*continued on page 6*

## NOAA Weather Radio to Announce Civil Emergencies in Pilot Program

—By Keli Tarp

Already considered a life-saving tool because of its severe weather warnings, NOAA Weather Radio just became even more valuable in Oklahoma City, Okla. Now, civil emergency messages will be announced on NOAA Weather Radio as a result of a new agreement between Oklahoma City and the National Weather Service announced Dec. 14.

"We are working with local emergency management officials to use NOAA Weather Radio to alert the public to any significant non-meteorological threats that are not self-evident and not immediately covered by local media," said Mike Foster, meteorologist in charge of the National Weather Service forecast office in Norman, Okla.

The weather radio emergency announcements will include a short message about the threat and the actions needed to be taken, and will refer the listener to local television and radio for more information.

To activate the NOAA Weather Radio announcement, a local emergency manager will notify the National Weather Service. The forecaster will then verify the information, compose the message and broadcast it. This process *continued on page 8*

# NOAA Fisheries Enforcement Agents Strengthen Houston Ship Channel Patrols

—By Mark Oswell

Over the past several months, homeland security has become the priority of every law enforcement agency, the federal government and the American people.

Airport security has added National Guard troops, the Federal Bureau of Investigation now has increased powers, and the Federal Aviation Administration has expanded the federal air marshal program.

But while many Americans are focused on the skies, several law enforcement agencies have their eyes set on our nation's waterways. NOAA Fisheries' Office for Law Enforcement is one group that is particularly concerned about the safety of our marine borders.

Tasked with protecting and conserving our nation's living marine resources by enforcing federal fishery laws on the ocean and at the docks, NOAA Fisheries' special agents and enforcement

officers routinely work closely with counterparts in the U.S. Coast Guard investigating violations related to fisheries, marine mammal protection and endangered species.

Since early October, this cooperative effort to protect our nation's ports and shipping channels was greatly expanded when the Coast Guard called the Office for Law Enforcement to assist in protecting some of the larger U.S. ports.

In Houston, nearly 7,000 freighter ships enter the 52-mile-long channel annually, delivering chemicals and oil for America's gas pumps. Millions of gallons of oil are shipped through the Houston harbor for refining, and additional oil is produced offshore, making the Houston shipping channel a vital national asset.

There, the Coast Guard has assigned numerous personnel, ships and aircraft to protect the area's important oil facilities, the citizens *continued on page 7*

# Fisheries Service Names Employees of the Year

—By Dane Konop

The National Marine Fisheries Service honored its employees of the year in a ceremony in the NOAA Auditorium in Silver Spring, Md., Dec. 19.

Following remarks from John Oliver, Fisheries Deputy Assistant Administrator for Operations, Rebecca Lent, Fisheries Deputy Assistant Administrator for Regulatory Programs, William Hogarth, Assistant Administrator for Fisheries, Deputy Under Secretary of Commerce Scott Gudes and Deputy Secretary of Commerce Sam Bodman, the following employees received individual awards.

## Clerical/Secretary

Anne Bergstrom, Jann Bluett, Sally Clement, Joyce Mochrie, Cathy Noonan, Mary Nunez, Dodie Pickle, Tracy Schaerer, Ty Stuckey and Deborah Welch.

## Administration/Technical Support

Nicole Bouchard, Lori Budbill, Jan Charity, Peggy Donnelly, Wende Goo, Peter Jones, Martha Kawai, Rosalie Shaffer, James Simonson, Peggy Solomon and April Wolstencroft.

## Professional—GS12/III and below

Jennifer Anderson, Paul Anderson, Jay Burnett, Christina Fahy, Kevin Ford, Douglas Harper, Michael Johnson, Steve Lewis, Michael Mohr, Elizabeth Pritchard and Steven Smith.

## Professional—GS13/IV and above

George Balazs, Russell Brown, Tina Chang, Eric Hawk, Jerry Hornof, J. Frank Morado, Gregory Power, Gary Sims, Peter Thompson, Vera Trainer and Galen Tromble.

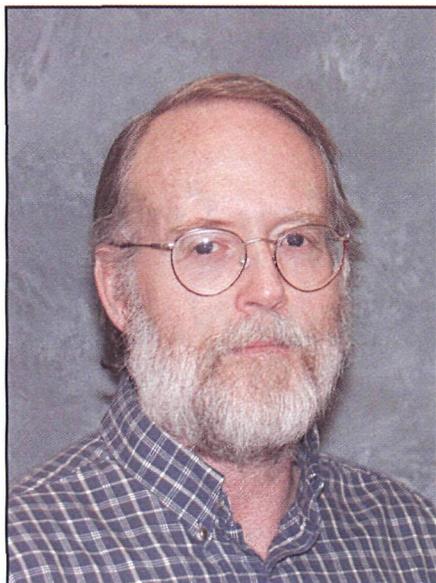
## Management/Supervisory

*continued on page 8*



Mark Oswell/NOAA

NOAA Fisheries special agent Ron Dearmin (right) and U.S. Coast Guardsman Jonathan Skinner conduct homeland security patrols in the Houston ship channel aboard one of NOAA's fisheries enforcement boats.



Wilfred Von Dauster/NOAA

James R. Jordan.

## James R. Jordan Is NOAA's Employee of the Month

—By Jana Goldman

James R. Jordan is an observant guy. And that's a good thing, as Jordan, who is the January Employee of the Month, leads a team that develops and deploys instruments that watch the Earth's atmospheric systems.

Jordan's been with NOAA since he was a student at the University of Colorado in 1973 and working for the Environmental Technology Laboratory in Boulder, which back then was known as the Wave Propagation Laboratory.

He moved to the Climate Monitoring and Diagnostics Laboratory for a while in the late 1970s, which gave him a chance to winter at the South Pole, but came back to Boulder in 1979, where he's been ever since.

For the past 12 years, he has been working with wind profiling radars, devices used in air quality research that tell scientists more than which way the wind blows.

"During my career, I worked on a lot of different instruments,"

Jordan said. "Radiometers at one time, and before that another radar."

He started building radars because he found them to be very interesting electrical devices.

"I was building data loggers when I was at [the laboratory] and was getting bored with it," Jordan said. "When a radar job opened up in WPL, I took it."

He is team leader of the Observing Network Group within the laboratory's Regional Weather and Climate Applications Division, working with engineers who have both developed and deployed remote sensing technology throughout the globe in difficult terrain and sometimes harsh weather conditions.

Which brings us to that winter in the South Pole in 1975-76.

Jordan was maintaining atmospheric monitoring equipment during the long, dark days that are typical for a polar winter. He says that his youth and inexperience helped him get through it. While he would not leap at the chance to spend another winter at the South Pole, he did spend a summer there and said he would do that again.

But the winters in Colorado seem to suit him just fine. He was born in Colorado, raised in Denver, and lives in Boulder with his wife Sandy, daughter Kimberly, and son Allen.

So, being an observant guy, has he noticed any changes in NOAA in that almost 30 years?

"There haven't been many changes here in the last 30 years," he said. "There is so little turnover in the labs, that I work with mostly the same people I did 25 years ago. We did move to a new building three years ago, but the 'works' remain similar."

And it is with the "works" that Jordan and his team have found "simple but elegant solutions to  
*continued on page 7*



William R. Crippen/Burns &amp; McDonnell

William Singleton.

## Team Member of the Month Is William Singleton

—By Dane Konop

William Singleton, who heads up the team that designed the building that will replace NOAA's existing Tsunami Warning Center in Palmer, Alaska, is the January Team Member of the Month.

Singleton is a mechanical engineer and project leader for Burns and McDonnell Engineering Company in Kansas City, Mo.

Not only did Singleton's team complete the design for the new warning center on time and under budget, but it's also an environmentally friendly design under criteria established by the U.S. Green Building Council. The council is a public-private sector group that encourages energy efficient and environmentally sensitive buildings and construction techniques.

The government team for the project was unfamiliar with the council's relatively new standards.

"So Bill took the initiative,  
*continued on page 8*

# Focus On...

## Special People's Holiday Cruise on the NOAA Ship *John N. Cobb*



Larry W. Mordock/NOAA

NOAA Ship *Cobb* and NOAA Marine Center escorts make sure guests' personal flotation devices are secure before setting off onto Lake Union aboard the ship.



Larry W. Mordock/NOAA

The NOAA Ship *Cobb*'s guests arrive at the NOAA Marine Operations Center.

—By Larry W. Mordock

On the first Sunday of every December, the officers and crew of the NOAA Ship *John N. Cobb* join other seafarers in Seattle, Wash., to kick off the holiday season and bring extra cheer to some special area residents.

On Dec. 2, for the sixteenth consecutive year, *Cobb* joined over 400 work boats, yachts and fishing vessels of widely assorted shapes and sizes, all decorated with lights and garlands, in a late afternoon parade around Lake Union and adjoining Lake Washington in Seattle's Special People's Holiday Cruise.

Aboard *Cobb* and the other

vessels were the festival's special guests—more than two thousand developmentally disabled Puget Sound residents.

This year, as always, there was plenty of holiday food and hot chocolate for the two dozen or so special guests aboard *Cobb*, which was bedecked with holiday decorations by the ship's crew and volunteers from the NOAA Marine Operations Center on Lake Union.

*continued on page 5*

*continued from page 4*

A number of personnel from other NOAA ships and the marine center volunteered as personal escorts for each of *Cobb's* guests.

Although the boats of the holiday cruise could not parade between Lakes Union and Washington this year because of the closure of the bridged channel between the two lakes, the enthusiasm of *Cobb's* crew and the delight of its special passengers were undiminished. ☺



Larry W. Mordock/NOAA

Michael Wallace, an electronics technician at the NOAA Marine Center in Seattle, entertains the NOAA Ship *Cobb's* guests and other shoreside visitors with his barrel organ.



Larry W. Mordock/NOAA

The NOAA Ship *Cobb's* guests and escorts gather on the ship's forecandle for Seattle's Special People's Holiday Cruise on Lake Union.

# Winter Storms

*continued from page 1*

The researchers were studying precipitation—rain and snow—to better understand how to forecast how much of the wet stuff can fall on a given area. This is of major importance when flooding can occur or for skiers hoping to schuss down a mountain covered with a blanket of snow.

It's also very important to an aircraft flying through winter storms.

"On the last flight, the plane picked up quite a bit of ice," Colman said. "That happens when there are lots of supercooled drops in the cloud. They quickly freeze to the outside of the plane. The plane has anti-ice equipment that basically heats up the outside of the plane so the pieces of ice break off. Sometimes you can hear them hitting the plane. This last flight, as it picked up ice, the plane had a bit of a shudder to it, much more than usual. Finally, after one of the scientists decided he must ask if it was okay, the crew assured him that it was just the ice," he said.

"It's very exciting being involved in a project that targets one of the key remaining forecast challenges—that of forecasting how much precipitation will fall and where," said Colman, who is the science and operations officer of the National Weather Service's Seattle-Tacoma forecast office and a principal investigator in the project.

The project, called IMPROVE, short for Improvement of Microphysical Parameterization through Observational Verification Experiment, concentrated on central Oregon in the vicinity of the Cascade Range. Eight intensive operation periods, with flights ranging from five to nine hours long, were conducted during the field program.

"Our project is ending with a

splat and everyone involved could not be more pleased," said Nick Bond of NOAA's Pacific Marine Environmental Laboratory in Seattle, Wash., one of the project investigators, a few days before the project ended Dec. 22. "Roughly half of the missions were carried out in storms with heavy and widespread precipitation, which is just what we wanted," he said.

Bond noted that probably the "crown jewel" of the project might be the work done on Dec. 13, which happened to be the rainiest Dec. 13 on record in Seattle.

"While our principal study area is to the south over Oregon, it came down plenty there," he said.

Quantitative precipitation forecasts, or QPFs, are critically important to many weather events, including flooding, winter storms and water management. Yet improvements in the skill of QPFs have been difficult and slow, often lagging behind improvements in other forecasts.

"We are hopeful that as the National Weather Service moves on to the next generation of forecast models, they will do a better job of forecasting precipitation, partly as a result of the data we are collecting today," Colman said.

The field work for this experiment involved flights into storms, some of them fierce, according to the researchers aboard NOAA's P-3, which is used for hurricane work, and the Convair-580 research aircraft from the University of Washington.

A ground-based radar from the National Center for Atmospheric Research in Boulder, Colo., and wind profilers from NOAA's Environmental Technology Laboratory, among other platforms, took land-based measurements.

"The P-3 aircraft are designed to withstand heavy icing conditions, and the one we used in IMPROVE has been up to the test," Bond

said.

IMPROVE showed signs of success from the very start.

"Mid-morning upper air soundings during the very first IMPROVE flight provided forecasters with valuable information on much different winds and stability behind a vigorous front, compared to the data from the standard early morning synoptic upper air sounding taken ahead of the front," said Chris Hill, meteorologist in charge at the Seattle-Tacoma weather forecast office. "This extra information led to greatly improved short-term wind and precipitation forecasts."

The data have both short- and long-term uses.

"The immediate benefit of this project is the ability for our forecasters to see additional data sets not normally available," said Steve Todd, meteorologist in charge at the weather forecast office in Portland, Ore. "Of specific interest is a new product from the wind profilers giving the forecaster an idea of how the melting level changes throughout a storm. This helps us refine our snow levels in the short-term forecast. Longer term, we expect the results of this research to help improve precipitation forecasts contained in the numerical models."

IMPROVE also offered forecasters a researcher's-eye view of a storm.

"Flying in the NOAA P-3 gives the forecaster a rare opportunity to become fully immersed in a weather event and also see first hand how the researchers collect data," said Hill. "For the second flight, I sat at a workstation with four computer screens, each capable of displaying about 20 different things—nose radar, tail radar, cloud particle sampler, various external cameras, plots of many sensor readouts, such as wind and

*continued on page 7*

## Harbor Patrols

*continued from page 2*

of Houston and the numerous critical wildlife habitats adjoining the Houston ship channel and Galveston Bay.

Endangered sea turtles, saltwater game fish, American alligators, rare shorebirds and countless other species rely on the wetlands and marshes of the Gulf of Mexico for shelter, food and spawning grounds.

Texas also enjoys a large fishing industry, worth nearly \$3 billion in revenue from open ocean catches, migratory species and coastal fish, and an additional \$3 million from the shrimp industry.

To protect this important ecosystem and these large commercial fisheries and to ensure the safety of the Houston ship channel, NOAA Fisheries enforcement agents and officers have worked shoulder to shoulder with their Coast Guard counterparts.

"By integrating our patrols with the Coast Guard, we can provide 24-hour safety watches along the entire channel," said NOAA Fisheries enforcement officer Gino Freselli.

The Office for Law Enforcement's southeast division has been rotating agents and officers through the Houston harbor assignment to ensure federal fishery laws are enforced while agents and officers continue to assist with homeland security.

To date, the biggest challenges of patrolling the channel have been severe thunderstorms and large floating debris in the channel. But the personnel from the Office for Law Enforcement remain inspired by the level of cooperation they have received from the many people who use the channel.

"The Houston ship channel mission is unique from other NOAA enforcement homeland

defense missions, such as FAA or FBI support, because it is structured around the mission of the Department of Commerce and NOAA," said David McKinney, deputy special agent in charge for the Office for Law Enforcement's southeast division. "We are able to provide additional security of the channel while we accomplish our primary job of enforcing fishery laws."

In the coming months, NOAA's enforcement officers will continue to work in partnership with the Coast Guard to patrol and monitor shipping in the Houston ship channel to ensure the safety of this valuable national asset as they also work to enforce the important fishery laws that protect the vital Texas fishing industry and critical wildlife habitats. ☺

## Winter Storms

*continued from page 6*

temperature, readouts of where the plane is over the terrain, and logs of visual observations to supplement the recorded data. The real bonus was watching the NOAA P-3 crew go about their duties in the most professional manner possible."

IMPROVE was a collaborative effort of the National Weather Service, the Pacific Marine Environmental Laboratory, the Environmental Technology Laboratory, the National Severe Storms Laboratory, the NOAA Aircraft Operations Center, the University of Washington's Department of Atmospheric Sciences, the National Center for Atmospheric Research, the U.S. Navy, the Department of Energy's Pacific Northwest Laboratory, and the State University of New York at Stony Brook.

Funding the experiment were the National Weather Service, the National Science Foundation, the U.S. Navy and the Department of Energy. ☺

## Jordan

*continued from page 3*

engineering problems," as his work is described in the Employee of the Month recognition citation.

He seems to have a special knack for developing instruments that will be deployed in remote and inaccessible areas, where they need to keep working unattended.

An example is a wind profiler prototype on a buoy anchored in the Southern California Bight off the Pacific coast near Los Angeles. Jordan worked with NOAA's Joint Institute for Marine Observations at the Scripps Institution of Oceanography on that project.

His nomination also recognizes his work promoting a highly effective partnership with private industry in a cooperative research and development agreement, called a "CRADA" for short.

The nomination reads: "Mr. Jordan has played an exemplary role as a member of the Engineering Review Board for NOAA Research's boundary layer wind profiler CRADA for the last ten years. He has encouraged joint efforts with investments by industry as well as the federal sector in overcoming technological limitations as they were discovered. An example of this is the implementation of wavelet-signal processing in a new commercial version of the wind profiler. Such a technique will allow observations of wind and temperature profiles in situations that were never before possible, benefitting both research applications as well as providing a more robust product for national and international marketing."

When asked his response to being named Employee of the Month, Jordan replied, "It's nice, but I'm not sure how I got nominated."

Evidently others are observant, too. ☺

## Singleton

*continued from page 3*

hosting a green design seminar with two instructors from the U.S. Green Building Council in Washington, D.C.," said Jerry Britton, NOAA program manager for the planning, design and construction management of this project and 13 others planned for the Alaska region of the National Weather Service. "Bill set it up, and the one-day training course was held at the offices of Burns and McDonnell in Kansas City. After the training, our entire group—his designers and the government personnel that attended—had a better understanding of what the (green building) process entails," Britton said.

Meeting the council's design standards, Singleton said, involves "using paints and adhesives that have low volatile organic off gasses, using recycled material, minimizing construction waste, minimizing the use of water, meeting heating efficiency and overall energy standards, and the use of natural light as much as possible."

The design also calls for reducing construction waste by 50 percent of what would normally be expected in a project of this size.

"You do that by requiring the (construction) contractor to recycle as much material as possible," Singleton said. "If you don't tell a contractor to do this, everything is going to go in the dumpster."

The Tsunami Warning Center in Palmer monitors and warns of earthquakes and other seismic activity that could trigger a tsunami. Because of the sensitivity of the center's 24-hours-a-day mission, the new center needed an uninterruptible power supply and to be brought on line with no interruption of the center's monitoring and warning capability.

Electrical power for the center and its seismographs and other

equipment will be backed up by a generator driven by natural gas.

The generator can also be powered by propane in case gas lines are damaged in an Alaskan earthquake.

The 6,700-square-foot building, which replaces a converted house trailer, will be a pre-engineered, rectangular metal building so that there will be no support columns in the middle of the floor. Singleton said it will be similar to a weather forecast office, with an operations area in the center and open work spaces with modular furniture. Full spectrum lighting, which simulates natural sunlight, a variable forced air heating system and heavily insulated doors and windows will be welcome improvements for the current drafty center's staff during Alaska's cold, dark winters.

Another sign of the success of the design of the new tsunami warning center is the just-completed construction bidding process.

"This past Dec. 6, we had a very successful bid opening," Britton said. "Everyone from the government was extremely pleased at the number of bids that were received."

Three or four bids were expected; nine were received.

"They were real close together, which always indicates a very good set of contract documents—drawings and specifications. I credit Bill with making sure that happened," Britton said.

Construction is expected to begin in the spring. ☺

## Fisheries Employees

*continued from page 2*

John Boreman, James Bybee, Christopher Doley, John Ferguson, William Fleek, Karin Forney, Harold Mears, Thomas Minello, Russell Nelson, Michael Tehan and James Weaver. ☺

## Weather Radio

*continued from page 1*

should take only a few minutes, providing rapid dissemination of the information.

"NOAA Weather Radio will serve as a vehicle to notify a lot more citizens in the Oklahoma City area not only of natural disasters but other civil emergencies as well," said John Clark, director of the Oklahoma City Office of Emergency Management.

The two organizations, along with the Oklahoma Department of Civil Emergency Management, have been working together for almost two years on a project to get more NOAA Weather Radios in the hands of area residents. Through "Operation Warn," nearly 27,000 specially-priced Midland weather radios have been sold through Oklahoma City area Wal-Mart stores. This successful NOAA Weather Radio promotion was recognized with a Mark Trail Award last spring.

NOAA Weather Radio is a 24-hour source of weather forecasts and warnings provided by the National Weather Service. Weather radios come in many sizes, with a variety of functions and costs, and are available at most electronics stores. ☺

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