

NOAA REPORT



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NMFS Gets Top Sportfishing Award:

NMFS director Rollie Schmitt has accepted on behalf of the agency today the American Sportfishing Association's 1996 Excellence in Sport Fisheries Management Award for leadership in producing the Recreational Fishery Resources Conservation Plan and joint endangered species policy, unveiled by the Administration in June. The ASA award recognizes the Fisheries Services' dedication and leadership that produced such an important sport fisheries management plan and joint policy. As co-sponsor of the plan and policy, the U.S. Fish and Wildlife Ser-

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vice received the same award.

"I'm pleased to accept this award for those in the agency who have worked so hard to produce the Recreational Fishery Resources Conservation Plan," said Schmitt. "This plan will allow us to improve the management of marine fisheries by encouraging anglers to further promote conservation and restoration activities and by supporting educational outreach programs. Also, we will evaluate agency actions and their effects on marine recreational fisheries."

Frey Named NODC Director: Henry R. Frey, an oceanographer, diver and former professor, has been named director of NOAA's National Oceanographic Data Center, the Nation's repository and dissemination center for

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The NOAA Ship Rude, one of the ships involved in the search and recovery efforts at the site of the TWA flight 800 crash off Long Island. The ship is based at the NOAA Atlantic Marine Center in Norfolk, Va.

High Tech Sonar on Rude Finds TWA Crash Wreckage

Against a backdrop illuminated by national tragedy, the NOAA ship *Rude* and its commander and crew have been key players in the drama that unfolded with the explosion of TWA Flight 800 over Long Island Sound on the night of July 17.

Rude Commander Samuel DeBow of the NOAA Corps was quick to respond to the Coast Guard's request for help, leaving Pt. Judith, R.I., where the ship was on a mapping and charting mission, that night and arriving at 7:10 the next morning—making NOAA the second Federal agency on the scene after the Coast Guard.

The *Rude* quickly went from collecting surface debris at the request of the Coast Guard and National Transportation Safety Board to deploying the special hydrographic survey equipment it uses to investigate obstructions in U.S. waters for the update of nautical charts.

The ship was the first in the area with high resolution underwater search capabilities until a Navy contract vessel joined the search on Sunday.

Using the *Rude's* state of the art multi-beam sounding system, known as SEABAT, and its towed side-scan

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Prediction Center Opens With New Update

The National Centers for Environmental Prediction's new Storm Prediction Center has introduced its first product—a short-term forecast of hazardous weather across the United States called the *Hazardous Weather Update*—from its new facility at Oklahoma University's research park in Norman, Okla.

National Weather Service Director Joe Friday and Oklahoma Congressman J.C. Watts were on hand for the ribbon-cutting ceremony, officially opening the center and introducing the *Update*.

"The dedication of the Storm Prediction Center is another milestone in the National Weather Service modernization and our efforts to provide the best weather services to this nation," said Friday. "The *Hazardous Weather Update* is a single source of hazardous weather information for users, the first time a 'one-stop' product like this has been made available."

The *Update*, which officially began as a test product on July 10, is a



Rep. J.C. Watts (R-Okla.) (center) and NWS director Joe Friday (right), cut the ribbon to open the new Storm Prediction Center in Norman, Okla., aided by NWS Public Affairs Officer Stephanie Kenitzer (foreground left), Oklahoma University Dean John Snow (background left) and SPC Deputy Director Gary Grice (background right)

forecast of the hazardous weather associated with major on-going storm systems moving across the country as well as other hazardous weather that has regional or national

significance. The *Updates* will include general forecasts of where hazardous weather is expected to move and its anticipated impact. They will also give brief descriptions of weather watches, warnings and advisories associated with storm systems. The types of hazardous weather to be included in updates are: severe thunderstorms, tornadoes, locally heavy rain and flash flooding, heavy snow, blizzards, ice storms, and dangerous wind chill or heat indices.

According to SPC Director Joe Schaefer, *Hazardous Weather Updates* will be issued only when widespread weather conditions pose a threat to life and property. The *Update* will remain in a testing phase until May 1997, at which time the SPC will ask users to help determine its future.

—Kim Comba ☺

Fund Established to Aid Families of April Bosnia Crash Victims

A fund to benefit the survivors of the Commerce employees who died in the April 3 plane crash in Bosnia is being established, and will be accepting contributions this month only.

The goal of the fund is to assist Commerce families with expenses for funerals, children's educations, and other needs related to a loss of income. During the one-month campaign, every Commerce employee will be contacted directly by a volunteer from his or her office.

The fund campaign has been authorized to run only through the end of August by the Office of Personnel Management, so not to conflict with the Combined Federal Campaign. The Commerce Employees Fund will be administered by the Federal Employee Education and Assistance Fund, a nonprofit group based in Colorado. ☺

Thirteen Hundred Surveyed

Poll Finds Americans Trust Us on Oceans

When it comes to protecting the oceans, Americans put their trust in NOAA and a select group of other organizations, according to a national poll.

The poll, conducted by the Mellman Group, showed that 49 percent of Americans said they trust "a great deal" what NOAA says about ocean protection. The only groups and individuals who scored higher were National Geographic (68 percent), Jacques Cousteau (63 percent), and local zoos and aquariums (51 percent).

33% Trust Their Kids

Thirty-three percent said they had a great deal of trust in what their children said about the oceans. Former Kansas Senator Bob Dole (eight percent) and "your member of Congress" (seven percent) brought up the rear as the least trusted. The poll had a margin of error of 3.3 percent.

Among the poll's other results:

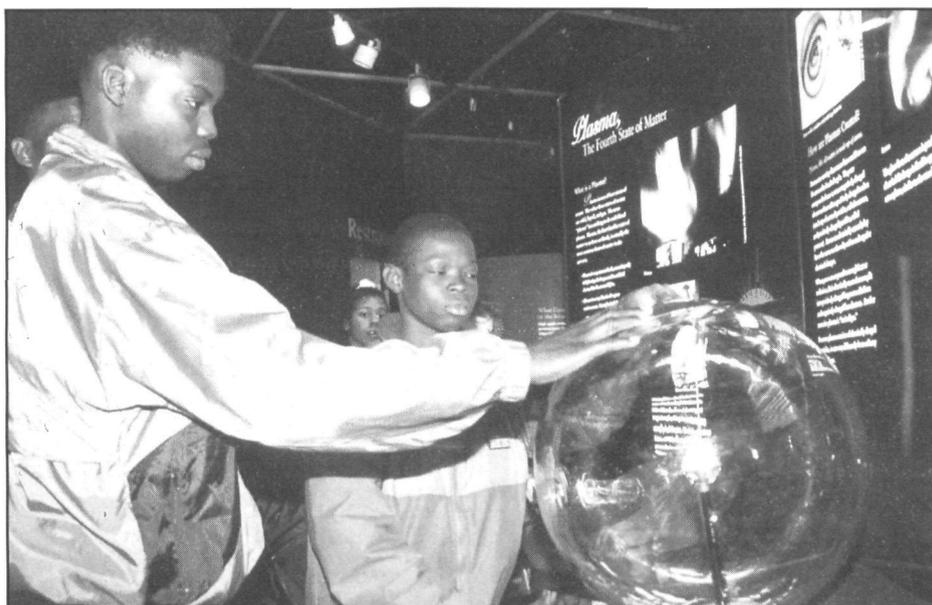
- 85 percent agree or strongly agree that the Federal government needs to do more to help protect the oceans, and 25 percent believe the Federal government could take important action to aid the health of the oceans;
- 81 percent believe the oceans are threatened by human activity, such as overfishing, destruction of coastal habitat, overdevelopment and pollution;
- 49 percent say that the condition of the ocean is very important to them personally, and in coastal communities, the figure rises to 64 percent;
- 72 percent believe funding for ocean exploration is more impor-

tant than funding for space exploration;

- Americans were essentially split on whether government should focus on the concerns of citizens (42 percent) or scientists (37

percent) about the oceans;

- 19 percent never eat fish or seafood, with a plurality citing the taste, but three percent would eat fish or seafood even if the government said it was contaminated. ☺



The aurora terralla, one of the many parts of the Electric Space exhibit at NOAA's Silver Spring Metro Center campus.

Exhibit Brings Outer Space Down to Earth

Outer space comes to Silver Spring in a major traveling exhibit, "Electric Space: Exploring Our Plasma Universe," which opened to the public earlier this month at the NOAA exhibit hall in Silver Spring, Md.

"The Electric Space exhibit should be a real treat for anyone—child or adult, scientist or non-scientist—who is interested in learning more about the earthly effects of phenomena we normally expect to find only in outer space," said NOAA acting Chief Scientist Al Beeton.

Visitors will learn how plasma, the matter that makes up stars, can be

found on Earth in lightning, in neon signs and in a common candle flame. Using interactive displays such as the aurora terralla, a 30-inch sphere that simulates a polar aurora, we can see how the Earth is really a giant magnet. The exhibit also reveals little-known secrets of the Sun, including the forces that produce solar winds that can buffet the Earth like a space-borne hurricane.

Developed by the Space Science Institute and the Franklin Institute Science Museum, the exhibit will be through Labor Day, September 2, before beginning a nationwide tour. ☺

Focus On...

Weather Forecasting Turns Olympian in Atlanta

Nearly 10,000 Olympians from around the world are converging on Atlanta, and at several sites across Georgia for the most coveted prizes in sports—Olympic Gold, Silver, and Bronze medals. Assembled only 40 miles southwest of Atlanta and near Savannah is another kind of Olympic team. This team of 34 meteorologists and computer system specialists will never compete for a gold medal, but over the course of the 1996 Olympic summer games, they will use the most technologically advanced equipment to provide a continuous stream of vital weather information intended to keep the games weatherwise and weathersafe.

To meet the challenge of providing weather information for the nearly two million anticipated visitors and athletes, the National Weather Service has established the Olympic Weather Support Team which is comprised of two components. One team of Olympic forecasters, located within the NWS Atlanta Forecast Office at Peachtree City, is providing weather support to all of the Olympic venues in and around Atlanta as well as several other locations in northern and central Georgia, and southern Tennessee. A smaller team, located near Savannah, is providing weather support to the yachting competition taking place off the Georgia coast.

WORLD EFFORT

Meteorologists on the Olympic forecast team, like the athletes competing in the summer games, come from around the world. The team is composed primarily of meteorologists from NWS offices across the United States, with additional support provided by meteorologists from Canada and Australia. The meteorologists have diverse operational backgrounds, and were chosen for their skills in areas that will be important to the overall Olympic weather support effort.

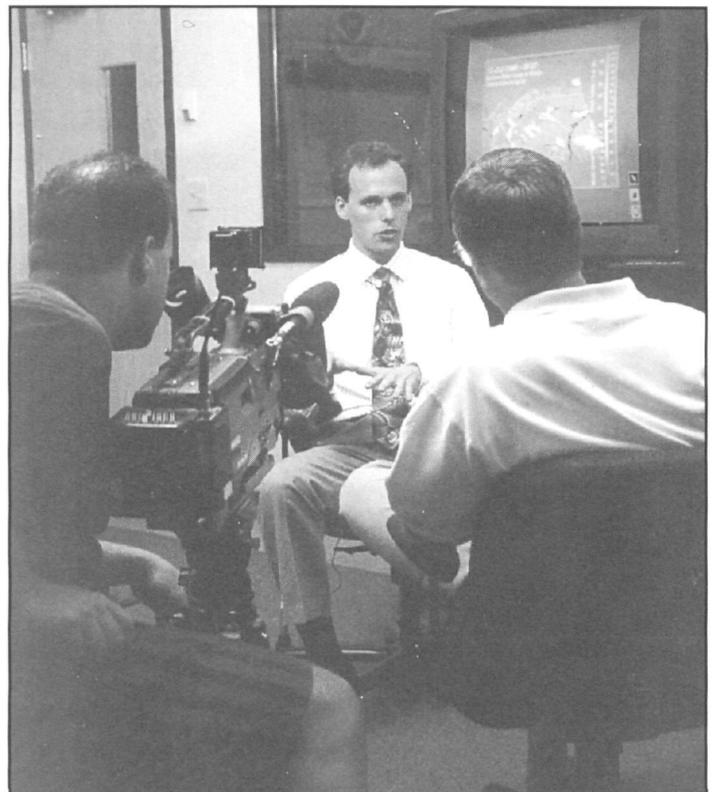
The Olympic forecast team is using the most technologically advanced collection of weather forecasting tools and observational equipment ever assembled. A primary tool is the WSR-88D Doppler radar system located at Peachtree City. The Peachtree City radar, one of the 158 now operating nationwide as part of the modernization program of the NWS, is the most advanced weather radar system on the planet. A new display system that allows forecasters to view the radar data in innovative ways has been added to the radar data acquisition unit. For example, the display system gives forecasters access to lightning data that can be correlated with radar echoes for critical warnings on lightning.

Other advanced equipment at the Olympic

Weather Support Office includes state-of-the-art computer workstations that forecasters use to create and generate forecasts and watch and warning information. Four times a day, weather forecasts for the next five days are generated and distributed throughout the Olympic events. Detailed weather briefings by a meteorologist are also provided to the Atlanta Committee for the Olympic Games (ACOG) as part of their daily planning efforts, since weather is critical to the operational planning throughout all of the Olympic events.

15-MINUTE UPDATES

Thanks to cooperation from a number of state and federal agen-



Lead NWS Olympic forecaster Lans Rothfusz (center) briefs a news crew about the new weather technology being used at the Games.

cies, Olympic forecasters are collecting data every fifteen minutes from one of the densest networks of weather reporting stations anywhere. The data are fed into brand new high resolution numerical weather models that enable forecasters to predict weather with a level of detail and precision never before possible.

One of the greatest challenges facing the Olympic Weather Support Team is providing rapid weather information to a diversity of venues with specific weather concerns. Thunderstorms are possible nearly every afternoon during the summer in Georgia. Most people know that the lightning that accompanies these storms is life-threatening. However, for the Olympics, some everyday weather events can also be of great concern. Officials at boating venues at Lake Lanier, for example, are concerned about changing wind conditions even down to wind speeds as low as 10 miles per hour. In contrast, the formation of dew is a major concern for the cycling event at the Stone Mountain velodrome, since any moisture on the sharply banked track can cause the course to become treacherous for the athletes. At no time in its history has the NWS issued warnings for wind speeds as low as 10 miles per hour or for dew formation; thus, Olympic forecasters are required to monitor a vast array of weather conditions affecting the venues. To meet this challenge, Olympic forecasters are using specially tailored computer software that allows venue-specific



NOAA's National Weather Service exhibit at the Olympic Games, Safety Through Science, stands at the entrance to the Georgia Dome, site of the gymnastics and basketball competitions, among others.

weather watches, warnings, and informational statements to be issued rapidly. Without the rapid capabilities provided by the computer hardware and software, Olympic forecasters would be unable to provide the variety of specific weather forecasts, watches, and warnings needed by the large number of Olympic events.

WORLDWIDE MEDIA INTEREST

The Olympic Weather Support Office's high-tech weather capabilities have attracted considerable media attention. Journalists from all over the U.S. and many countries have come to see the Olympic forecasters in action. Every member of the forecast team has been involved in telling the 1996 Olympics Weather Support story by giving tours, interviews and demonstra-

tions. The Olympic forecasters realize this is one of the most unique opportunities of their careers, and they are enthusiastic to talk about their experiences.

Planning of the special weather support for the 1996 Olympic Games began more than three years ago. Various agencies, universities, and countless numbers of people have contributed their time and resources to assemble the most advanced technology available at any weather office in the world. The mission of the Olympic Weather Support Offices of the NWS is to dedicate the world's best meteorological science, skill, service and technology to keep the 1996 Olympic Games weatherwise and weathersafe. The Olympic Weather Support Office is a glimpse into the future, and benefits from this special weather support effort will continue long after the Games are over. ☺

Rude's Sonar Locates Wreckage at TWA Crash Site off Long Island

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sonar system, those on board the vessel worked continuously to delineate the field of debris, systematically moving back and forth across the water's surface to scan the seafloor. Data gathered on Thursday and Friday south of Moriches Bay provided the first indications of what appeared to be a portion of the debris field.

The *Rude's* search and data collection efforts were effectively conducted despite what Cmdr. DeBow called "insane" conditions, where dozens of small boats initially plied the waters looking for surface debris; where the NTSB, Coast Guard, and later the Navy and FBI controlled different parts of the investigation and salvage operations; where multiple clearances were required to respond to the incessant media inquiries, but where no clear chain of command was established; and where the pressure to quickly recover the bodies of the victims to ease the suffering of their families exacerbated the emotional stress on the crew.

Despite the hardships inherent in the search efforts, Cmdr. DeBow said the mission "meant a lot" to his crew.

"It means a lot to us here to be involved in this effort," DeBow said. "I say it from my heart that we want to do everything we can to help recover the victims of this tragedy and bring some sense of closure to their families, who want to put their loved ones to rest."

Upon arrival, Cmdr. DeBow worked with Navy personnel aboard the Navy contract vessel *Pirouette* to coordinate operations, and helped define a search area of about 20 nautical square miles. This area was

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pinpointed by using such sources as eyewitness reports, surface debris positions, and airport control tower radar data coupled with the *Rude's* sonar data. The *Rude* and the *Pirouette* then split the search area and began what is described as "mowing the lawn" with their towed side scanners, scanning back and forth over imaginary lines, slightly overlapping each previous line.

The *Rude's* side scan sonar scans 150 meters to starboard and 150 meters to port of the towfish, and can detect small objects on the seafloor and geographical features as subtle as a one-foot sand wave. In the search, the crew is looking for debris high off of the seafloor, which would show up as black objects with white shadows on the sonar imagery. The vessel's SEABAT system is used to measure the depth of the seafloor in areas of interest and to determine how far down a piece of debris is. Three-dimensional maps of debris sites can be created using SEABAT imagery. Accurate interpretation of both systems' sonar data—distinguishing possible wreckage of the plane from natural geographical features—requires both technical skill and a great deal of experience.

By Tuesday, the *Rude* had located two major sites—all the significant wreckage found at this point—

enabling the Navy to send divers down to the targeted areas to search for victims and the flight recorders. Six victims were recovered from wreckage of the aircraft's fuselage. The *Rude* has since expanded its search area, but at press time no other debris has been found.

NOAA Corps Commander Nick Perugini, chief of NOS's Coast Survey Atlantic Hydrographic Branch, arrived at the crash site in East Moriches, L.I., on Sunday to coordinate the *Rude's* efforts with the NTSB, Coast Guard and Navy, and to manage the processing, analysis, and interpretation of sonar data for Federal investigators. Perugini, Lt. Eddie Radford of NOS, and Ltjg. Shep Smith of NOS, who were also sent to the command post to help, are creating three dimensional maps of the debris sites using SEABAT imagery.

"This is the second time in recent years that NOAA has worked on extremely short notice with NTSB," said Cmdr. Perugini. "In 1992, the *Rude* was quickly on the scene to help determine the cause of the Queen Elizabeth II's grounding off Massachusetts. Our vessels operate 10 months a year away from home port, and when something like this

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New Standards for Reporting Aviation Weather Data

Pilots and meteorologists in the United States began using a modified international system for exchanging aviation weather data and forecasts on July 1.

The changeover was transparent to passengers but required members of the aviation community, weather observers, forecasters and others who use hourly surface weather data to begin using new codes and formats compatible with the standards used by the international aviation community.

"More than two years of spreading the word and reaching out to user groups around the country helped make this a pretty smooth transition," said Howard Diamond, who has led the changeover to the new weather information reporting standards for the National Weather Service.

The new system for transmitting Aviation Routine Weather Reports, referred to by the international acronym METAR, communicates hourly surface weather observations to the aviation and meteorology communities using a standard code format of letter and number combinations. Codes also changed to the international standard for communicating aviation weather forecasts, known by as TAF, or Aerodrome Forecast.

"Changing the way we communicate weather conditions and forecasts moves the U.S. toward a single worldwide standard in aviation weather reporting," Diamond said. The move, coordinated jointly by the National Weather Service, the Federal Aviation Administration and the Department of Defense, was the most significant since the adoption of surface meteorological codes in the 1950s.

This is a "major step forward in facilitating aviation activity between the U.S. and other countries, and in promoting safety," said FAA administrator David R. Hinson. He said the transition to METAR/TAF reflects the growth in international flights between the U.S. and other nations from more U.S. locations than ever before.

One of the principal reasons for adopting the international coding format is to standardize the reporting and distribution of surface weather observations globally. The U.S. uses international weather data more than ever in the sophisticated global models used in developing short and long-range forecasts.

In addition to extensive coordination between federal agencies, user groups and information providers, the U.S. conversion required significant computer software changes to existing practices and procedures for communicating weather data and forecasts.

After the U.S. announced plans to move towards the international METAR/TAF weather reporting standards in

1991, the National Weather Service began a broad effort to communicate the changes to the aviation and meteorology communities using tools such as news articles, and presentations and publications offered at user conferences throughout the United States.

An Internet Web Site (<http://www.nws.noaa.gov/oso/oso1/oso12/metar.htm>) created by NWS to share important METAR/TAF information has been visited by an average of some 3,000 users each month. ☺



NOAA Associate Deputy Under Secretary John Carey was General Chairman of the 1996 PACON International Conference.

NOAA Leads PACON Meeting

NOAA Associate Deputy Under Secretary John Carey (*above*) was General Chairman of the PACON 96 meeting in Honolulu recently. PACON International is an organization of marine scientists, industry representatives and policy makers sharing the latest marine science and technology and their applications. ☺

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global oceanographic data. It manages and distributes physical, chemical and biological oceanographic data collected by organizations in the United States and dozens of other countries around the world.

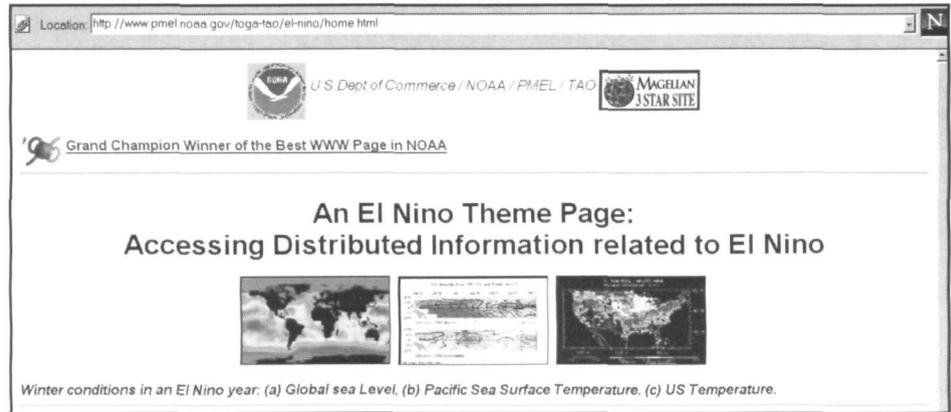
"I am excited about the prospects of leading NODC into the 21st century with special focus on data quality assurance, scientifically excellent analysis and synthesis products, and customer-focused management strategies," Frey said. "I view NODC's holdings as an important national data treasure."

Frey has served at NOAA for the past 19 years, most recently as deputy director of the Office of Oceanic Research Programs, where he managed the Na-

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tional Undersea Research Program and the Marine Advisory Services of the National Sea Grant College Program. Frey holds a B.S. degree in physics from Queens College and M.S. and Ph.D. degrees in oceanography from New York University. He also has logged more than 3,000 hours under water, and has served as divemaster and diver on various ships.

Hogarth To Lead NMFS Highly Migratory Species Division: William T. Hogarth has accepted a request to head up the Highly Migratory Species Division of the National Marine Fisheries Service for one year. Hogarth, who had already accepted an appointment to be the Southeast Region Fishery Administrator, will transfer to that position at the end of this assignment. Previously, Hogarth coordinated the fisheries services intergovernmental and recreational fisheries programs, and was Director of Marine Fisheries for the state of North Carolina. ☺



PMEL Leads Webshop '96 Award Winners—A web page dedicated to El Niño information (above) from the Pacific Marine Environmental Lab in Seattle won the Best of the Web award at NOAA's Webshop '96 conference, held in June. The award is for the best web page produced by a NOAA entity. You can see the winning site at <http://www.pmel.noaa.gov/toga-tao/el-nino/home.html>. Other finalists included pages about the Monterey Bay National Marine Sanctuary, Northeast Fisheries Science Center, the North Platte (Neb.) NWS forecast office and Climate Visualization from the National Climatic Data Center.

Rude Recovers TWA Wreckage

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happens, we can be diverted to help with recovery operations. As far as side sonar goes, we are as good as anybody—that's our business."

NOAA's efforts at the site are getting all-around recognition. In a call to Rear Admiral John Albright, director of NOAA's Atlantic and Pacific Marine Centers, Navy Capt. Raymond McCord, supervisor of the Navy's salvage operations, expressed the highest praise for Cmdr. DeBow and the *Rude*, and "the outstanding contribution they are making to the search effort."

Rear Admiral William L. Stubblefield, director of the Office of NOAA Corps Operations, echoed that praise.

"The highly professional effort and quick response of the *Rude* and NOAA's associated shore side support personnel to the TWA crash demonstrates the dedication and skill of the women and men who help meet NOAA's operational needs, both at sea and in the air," he said. "The pain that the families and friends of the crash victims are

experiencing is widely recognized, and all the NOAA personnel involved in the survey operations are committed to providing as many answers as is humanly possible. These officers and civilian personnel routinely take on difficult tasks and do an outstanding job. I am extremely proud of them all."

—Jeanne Kouhestani ☺

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