U.S. DEPARTMENT OF COMMERCE / National Oceanic and Atmospheric Administration

noaa week

Volume 7 Number 38 September 17, 1976

NOAA Office of Ocean Engineering Is Established

NOAA has established an Office of Ocean Engineering, which will include the existing NOAA Data Buoy Office, the Office of Manned Undersea Science and Technology, and certain functions of the former National Oceanographic Instrumentation Center.

Funded at slightly less than $9 million—all drawn from existing component groups—it will be headed initially by Acting Director Steven N. Anastasion of the Office of Marine Resources. It will report to the Administrator and receive policy guidance from the Associate Administrator for

Mr. Anastasion

(Continued on page 4)

BEING SWORN IN AS DEPUTY DIRECTOR OF THE ENVIRONMENTAL DATA SERVICE here is Dr. Thomas D. Potter, former Director of EDS' National Climatic Center in Asheville, N.C. Dr. Thomas S. Austin, EDS Director, administered the Oath of Office, and Mrs. Potter held the Bible.

Dr. Potter succeeds Arnold R. Hull, who died last March.

NWS Announces Jefferson, Holm Award Winners

The National Weather Service has announced the 1976 winners of the Jefferson and Holm awards, given each year to volunteer weather observers for unusual and outstanding accomplishments. The winners were selected from a network of about 12,000 cooperative observers who collect daily measurements of rainfall, temperature, and other meteorological data.

At the end of each month the measurements are mailed to the Environmental Data Service's National Climatic Center in Asheville, N.C., where they are processed for computer storage, and published in NOAA's *Climatological Data* to become a part of the permanent record of the world's weather.

About two-thirds of the volun-

(Continued on page 4)

37 NOAA Anniversary Open Houses Slated

Three more field installations have indicated their intentions of holding Open Houses this month: the National Weather Service Office in Burlington, Vt., on October 8; the NWS Meteorological Observatory in Limon, Colo., on October 10; and the WSO in Shreveport, La., on October 22 and 23. These three bring the total number of locations where NOAA's Sixth Anniversary will be celebrated to 37.

Plans for the Open House of NOAA Headquarters and other Washington, D.C., Area NOAA components, to be held at the National Weather Service Test and Evaluation Division's Sterling Research and Development Center in Sterling, Va., on October 1 and 2, are developing on schedule. Next week's issue of *NOAA Week* will announce some details on the exhibits being planned.

The Open House offers an ideal opportunity for NOAA employees and their families, as well as other area residents, to learn about NOAA's many contributions to life in America.

Surf Clam Crop Off New Jersey Is Threatened

Surf clams off the coast of New Jersey are dying at a significant rate, threatening a standing crop of approximately 187 million pounds, Dr. Carl J. Sindermann, Director of the NMFS Middle Atlantic Coastal Fisheries Center in Highlands, N.J., has warned the State's fishing industry.

The surf clams are dying at a significant rate, with an average mortality rate of 36 percent discovered during a just-completed research cruise conducted by the Center. Dr. Sindermann said the increasing mortality rate is the result of shortages of dissolved oxygen in the bottom layer of offshore water.

According to an interim report of mortalities among fish and shellfish off the New Jersey coast this summer, facultative anaerobic bacteria have also developed. Such organisms can derive their energy from sulphur, rather than oxygen. High levels of hydrogen sulfide (which smells like rotten eggs and is one of the end products of metabolism of these anaerobic organisms) have been found in the bottom

(Continued on page 4)

Bubbles in Ionosphere Linked to Radio, Satellite Communications Disturbances

Giant bubbles in the earth's ionosphere may be the cause of a common disruption of radio and satellite communications.

With a colorful manmade cloud over Brazil, a rocket probe, and a portable radar, an international team of scientists has discovered a six-mile-diameter bubble rising rapidly through the ionosphere, and has developed a theory linking such bubbles to radio disturbances.

Dr. Ben B. Balsley, David A. Carter, and Warner L. Ecklund of the Environmental Research Laboratories' Aeronomy Laboratory, and seven other scientists from Cornell University, the University of California at Berkeley, and the Max-Planck Institute of Physics in Germany made their find while trying to discover the cause of a phenomenon known as "equatorial spread F."

In point-to-point communications through satellite relays, the signals pass through the ionosphere both on their way to and from the satellite. At certain times--usually at night at low latitudes in the summer--the signals become extremely distorted. This happens when the radio beam is reflected or scattered by small, dense clouds--or "blobs"--of electrons in the ionosphere.

The group recently has completed analysis of the results from a major field experiment at

(Continued on page 3)

Texas Receives CZM Grant

Texas has been awarded $175,000 by the Office of Coastal Zone Management to supplement a $900,000 third-year grant awarded to the State in April to complete development of a coastal management program. The program is designed to achieve optimum use and development of the Texas coastal environment, and is being created in coordination with the general public, local governments, and State agencies.

Begun in 1974, the program may be completed next year, although the State can receive an additional year's funding under Federal law. The Coastal Zone Management Act of 1972, administered by OCZM, was amended recently to enable states to receive four, instead of three, annual grants to develop

(Continued on page 3)

personnel perspective

Current Vacancies in NOAA

To insure that NOAA employees are aware of job possibilities throughout the agency, a list of current NOAA-wide vacancies is published below. Employees interested in any of the listed vacancies should contact their servicing personnel office for information on where to apply.

Announcement Number	Position Title	Grade	MLC	Location	Issue Date	Closing Date
783-76	Communications Specialist	GS-12	NWS	Silver Spring, Md.	8-30-76	9-14-76
804-76	Meteorological Tech. (3 positions)	GS-9	NWS	Valdez, Alaska	9-10-76	9-24-76
805-76	EEO Officer	GS-12	HDQS	Boulder, Colo.	9-10-76	9-24-76
806-76	Fishery Biologist (Research)	GS-12	NMFS	La Jolla, Calif.	9-10-76	9-24-76
807-76	Electronics Engineer	GS-13	NWS	Sterling, Va.	9-10-76	9-24-76
808-76	Hydrologist	GS-13	NWS	Kansas City, Mo.	9-10-76	9-24-76
809-76	Supv. Meteorological Tech.	GS-11	NWS	Grand Island, Nebr.	9-10-76	9-24-76
810-76	Meteorologist	GS-13	NWS	Kansas City, Mo.	9-10-76	9-24-76
811-76	Meteorologist	GS-12	NWS	Charleston, W. Va.	9-10-76	9-24-76
812-76	Meteorological Tech.	GS-10	NWS	New York, N.Y.	9-13-76	9-27-76
813-76	Hydrologist	GS-12	NWS	Cincinnati, Ohio	9-13-76	9-27-76
814-76	Supv. Meteorologist	GS-13	EDS	Asheville, N.C.	9-13-76	9-27-76
817-76	Supv. Meteorologist	GS-14	NWS	Los Angeles, Calif.	9-13-76	9-27-76
818-76	Meteorologist	GS-12	NWS	Anchorage, Alaska	9-13-76	9-27-76
793-76	Meteorologist	GS-14	NWS	Silver Spring, Md.	9-1-76	9-30-76

Political Activity

Presidential election years with their primaries, conventions, and campaigns always stimulate questions in the area of political activities of Federal employees. Following are some general guidelines which outline what Federal employees can and cannot do in the political arena.

Federal employees may:

–vote as they choose

–express opinions on all political subjects and candidates

–make voluntary contributions to any political organization

–display bumper stickers on a private car

–participate in a nonpartisan local election in which party designation, nomination, and sponsorship are completely absent

–attend political rallies and join political clubs, but not take an active part in their operation.

Federal employees may not:

–be candidates for National or State Office

–solicit others to become candidates for partisan offices

–campaign for or against a political party or candidate

–use cars to transport voters, except family, to the polls

–distribute campaign materials

–march in a political parade

–promote political activities

–write for publication or publish any article or letter soliciting votes for or against any political party or candidate

–make a political contribution in a Federal building or to another employee.

Two relatively recent changes which affect the voting rights mentioned above are of interest to Federal employees.

A law now permits every citizen of the United States to vote for President and Vice President without regard to how recently he/she has changed his/her residence or where he/she may be at election time. It abolishes length-of-residence requirements in presidential elections and requires States to have absentee registration and voting procedures for such elections.

A 1970 Supreme Court decision held that persons living on Federal land in Maryland have the right to vote in State elections. The Department of Justice has determined that this decision may affect persons in other States who have been denied the right to vote in State elections because of their residence on Federal land.

The U.S. Civil Service Pamphlet, "FED Facts 2," will be made available to employees for guidance. Questions about Political activity may be directed to your servicing personnel office.

Position Descriptions

Whether or not supervisors have the right to assign employees tasks that are not specifically described in their position descriptions is a question that has plagued both employees and supervisors.

The frequency with which this question is raised indicates that certain basic misconceptions exist regarding the authority of supervisors to make work assignments and the actual functions of position descriptions.

It is important to remember that position descriptions reflect rather than prescribe the duties supervisors and managers assign to employees. Within the scope of their delegated authority supervisors have the right to make work assignments to their subordinates so long as the work assigned is reasonably related to the employees' position and qualifications.

For example, a supervisor may assign a GS-3 stenographer the task of delivering copies of a letter to other offices in the same building even if the employees' position description does not say, "deliver copies of letters to other offices."

But it would be unreasonable to assign a GS-3 stenographer the task of solving a complex engineering problem, conducting a financial audit or diagnosing an illness in a patient.

Moreover, an employee's refusal to carry out a legitimate work assignment may be cause for disciplinary action.

Normally, assigned work is or should be, described in the position description, but there are many reasons why it may not be. For example, the unit may have received an unusual or unexpected work project, or one that was not anticipated when the description was initially prepared. Another reason could be that the work is too detailed or performed too rarely to be described.

A position description is usually considered adequate if it describes the major duties and responsibilities and is presented in sufficient detail so that a trained position classifier can classify it to the proper series, title, and grade.

Generally this means that the work is described well enough so that the qualification requirements of the job are apparent to a person familiar with the occupation. The position description need not describe minor duties performed for a small percent of the employee's time, incidental duties, or those not performed on a regular or recurring basis.

These basic points should be remembered:

–Managers and supervisors are responsible for assigning work to individual employees and thereby defining positions;

–Employees are responsible for carrying out legitimate work assignments;

–Position descriptions reflect rather than prescribe or limit the duties and responsibilities of a position;

–Position descriptions are adequate of they describe the major duties, responsibilities, and supervising relationships of individual positions. They need not include minor duties and assignments that are rarely performed, and detailed tasks that are really a part of a major duty that is in the position description.

Health Benefits

Employees who are enrolled in Comprehensive Plans should be aware of the following conditions of enrollment:

–Comprehensive plans are only available for certain geographic localities.

–They are either group-practice plans which provide beneftis in the form of medical services by teams of doctors and technicians practicing in their own medical centers, or individual-practice plans which provide benefits in the form of direct payments to doctors with whom the plans have agreements. They also provide hospital benefits.

–An employee who is enrolled in a comprehensive plan and who moves outside the service area of the plan, may change to any other plan available in the area to which he/she moves and may change options from self only to self and family. If an employee already lived outside the service area of the plan, and moves farther from the nearest office of that plan, he/she may similarly change enrollment. Such a change should be made at the employee's earliest convenience.

Coast Pilot 3, 14th Edition, Published

The 14th edition of U.S. Coast Pilot 3, a 219-page nautical book covering a 270-mile stretch of Atlantic Coast from Sandy Hook, N.J., to Cape Henry, Va., has been published by the National Ocean Survey.

It is one of nine Pilots for all U.S. coastal and intracoastal waters, and the Great Lakes. Used primarily by the maritime industry and recreational boaters, the Pilots supplement the navigation information shown on standard nautical charts. They include navigation regulations, outstanding landmarks, channel and anchorage peculiarities, dangers, weather, ice, freshets, routes, pilotage, and port facilities.

The U.S. Coast Pilot 3, first published in 1894, details the oystering, fishing, and recreational waters, with special emphasis on the Chesapeake Bay, its harbors, rivers flowing into it, Delaware, Maryland, and Virginia resort areas, and Atlantic City, Ocean City and Cape May, N.J.

The 14th Edition (1976) of the United States Coast Pilot 3, Atlantic Coast-Sandy Hook to Cape Henry, may be purchased for $6 from the National Ocean Survey, Distribution Division (C44), Riverdale, Md. 20840; from the Atlantic Marine Center, 439 W. York Street, Norfolk, Va. 23510; or from NOS sales agents throughout the Nation.

A NEW THREE-YEAR AGREEMENT WAS SIGNED RECENTLY between the Environmental Data Service's National Climatic Center in Asheville, N.C., and Local 453 of the National Federation of Federal Employees. Signing for the two organizations were James R. Roddy, President of the Union, and Thomas D. Potter, then Director of NCC, who is now the new Deputy Director of EDS. The agreement was reached following only 17 hours of across-the-table negotiations between the negotiating teams (shown here), headed by William M. McMurray, NCC Deputy Director, and Robert K. Hood, Local Representative for NFFE.

(Seated from left) Mr. Hood; Mr. McMurray; Gilbert E. Ehrsam, NCC; (standing, from left) Robert E. LeClerg, NCC; Isabel M. Cole, NFFE; William D. Bartlett, NCC; Mr. Roddy; and Edward A. McNelly, NFFE.

Texas Receives CZM Grant *(Continued from page 1)*

their programs. In the three grants, plus the supplement, Texas has received about $2 1/2 million and added over $1 million in matching funds.

To complete the program, State officials said the third year grant and the supplemental funds will be used to establish a procedure that ensures the State will develop a uniform set of management goals and objectives, hold public hearings, identify coastal areas deserving special consideration, and increase intergovernmental coordination.

Part of the funds will also be used to develop techniques and data for assisting officials in determining the potential onshore impacts of offshore oil and gas development. The Texas General Land Office will administer the funds, portions of which will be allocated to other State agencies for assistance.

Bubbles in Ionosphere, Radio Disturbances *(Continued from page 1)*

Natal, Brazil, in 1973 and has formulated a theory to explain how motions in the ionosphere could produce the irregularities that cause spread F.

From Natal, near the magnetic equator, a National Aeronautics and Space Administration Javelin rocket was launched into the ionosphere during a certain time interval after sunset. At a height of 275 miles (460 kilometers), the rocket released a cloud of metallic barium, a harmless substance that "colors" a patch of the ionosphere, allowing scientists to see otherwise invisible ionospheric motions with a telescope. Part of the barium cloud rose rapidly after being released, showing a general upward drift of the ionosphere.

The rocket also carried instruments to measure the density of the plasma (ionized particles) which comprises the ionosphere. Data from the rocket instruments showed extreme fluctuations in plasma density, including one large region, about six miles (10 kilometers) thick, where the plasma thinned out drastically, becoming 100 times more tenuous than the surrounding area.

Meanwhile, a radar on the ground detected a patch of irregularities rising rapidly through the ionosphere. Its initial velocity was over 840 miles (1,400 kilometers) an hour, a rate even greater than the velocity of the barium cloud. From records of its trajectory, the scientists inferred that the patch had originated at the location of the hole detected by the rocket. They believe that the rapidly rising, 10-kilometer hole they saw was like a bubble in the ionosphere.

The smaller irregularities that cause spread F may be due to turbulence on the edges of such bubbles.

The charged particles in the ionosphere, explains Dr. Balsley, are held up against the pull of gravity by the lines of force of the earth's magnetic field. As the sun heats up the day side of the world, horizontal winds develop that try to draw the ionozed particles along, but the magnetic field lines hold them back. The conflicting forces generate an electric field, which pushes the ionosphere upward. At night, a reversed electric field arises due to cooling of the atmosphere, and the ionosphere is driven downward again.

But, says the ERL scientist, the ionosphere doesn't sink uniformly. "If you have a jar with some molasses on the bottom and turn the jar upside down, the molasses won't run toward the cap in an even sheet. It moves in globs or streams. The ionosphere acts much the same way. While the dense plasma sinks in globs, other areas of low density rise to the top. The bubble we saw was where it was rising."

noaa week

Published weekly at Rockville, Md., by the Office of Public Affairs for the information of employees of the Commerce Department's National Oceanic and Atmospheric Administration.

Articles to be considered for publication should be submitted at least a week in advance to **NOAA Week**, Room 221, WSC 5, Office of Public Affairs, National Oceanic and Atmospheric Administration, Rockville, Md. 20852.

NOAA Week reserves the right to make corrections, changes or deletions in submitted copy in conformity with the policies of the paper or the Administration.

Catherine S. Cawley, Editor

Warren W. Buck, Jr., Art Director

U. of Georgia Is Awarded Sea Grant

A $582,000 Sea Grant has been awarded to the University of Georgia. The grant, backed by $497,000 in non-Federal matching funds, will also involve the Georgia Institute of Technology and Skidaway Institute of Oceanography, and will include several projects aimed at making better use of fish and fish wastes.

Among the most unusual and economically promising research projects under this year's Sea Grant is an evaluation of a unique method of preserving the large quantities of otherwise unsalable fish that are caught by shrimp fishermen in Georgia. Because of the low value of these trash fish (five to ten cents per pound compared to more than $2.50 per pound for shrimp), shrimpers are unwilling to tie up valuable ice storage space to hold the incidental catch.

A team of researchers at the University of Georgia is working on a method of grinding the fish with corn and molasses and then introducing a harmless acid-producing bacterium, *Lactobacillus,* thereby preventing spoilage without the use of ice. Tests will be run this year to determine the suitability of the resultant fish meal for swine feed.

In related work, scientists are investigating the use of chitosan, a chemical derivative from crab and shrimp wastes, to determine its chemical and physical properties and its usefulness as an ingredient in treating sewage sludge. Other work is aimed at extending the shelf life of fresh fish including the use of a special oxygen permeable packaging film.

At the Georgia Institute of Technology, a program is underway to see if coastal sand and gravel deposits could be used by the building and highway construction industries. Such materials are now shipped at considerable cost from northern Georgia. Sampling of coastal aggregates last year indicated that the materials would be suitable for construction purposes and other special uses, such as glass production and beach replenishment.

Photos for NOAA Week

Black and white glossy photos are preferred for use in *NOAA Week.* Color photos, as well as black and white photos of marginal quality, may not reproduce will enough for individals in the pictures to be recognizable. Therefore, such photos may or may not be used in *NOAA Week* at the discretion of the Editor and the Art Director.

NOAA Office of Engineering Established

(Continued from page 1)

Marine Resources.

"Ocean resources, their sound use and environmental protection, are vitally important to our Nation," Dr. White, NOAA Administrator, said, in announcing the new office. "Energy and other crucial offshore development require significant advances in fundamental engineering knowledge. Our knowledge is now inadequate; the lack of that knowledge is contributing daily to the high cost of continental shelf development, and we must intensify our efforts to acquire it."

Not only will the new office coordinate existing NOAA ocean engineering programs; it will initiate some of its own and will serve as a focus for technology transfer within the entire marine community, working closely with other Federal, academic and industrial organizations.

A major element of the new office's effort will be an ocean instrumentation program useful not only to NOAA but to the Federal and private marine program. It will include research, development, and the standards, metrology and calibration essential to data quality. In developing this national program, NOAA will work closely with the National Bureau of Standards.

Mr. Anastasion joined NOAA in 1972 after retiring as a Captain at the end of a 30-year career in the U.S. Navy during which he held a variety of sea and shore posts. In addition to his present assignment as Chief of the Plans and Program Coordination Office in the Office of Marine Resources, he serves as Executive Secretary of the Interagency Committee on Marine Science and Engineering, and as Chief Scientist for the U.S.-French Cooperation in Oceanography. He also is U.S. Chairman of the Marine Resources and Engineering Coordination Committee of the U.S.-Japan Natural Resources Agreement.

A graduate of the U.S. Naval Academy, he earned an MS degree in electrical engineering from Massachusetts Institute of Technology. His Navy assignments included serving as commanding officer of the Guided Missile Cruiser USS Leahy; a technical participant in the Eniwetok atomic tests in 1951; technical assistant to the Assistant Secretary of the Navy for Research and Development; and commander of the Naval Weapons Laboratory, Dahlgren, Va.

Surf Clam Crop Is Threatened

(Continued from page 1)

waters over an extensive area. Furthermore, the acidity of the bottom waters has been found to be above normal.

The Middle Atlantic Coastal Fisheries Center, with support of the Environmental Research Laboratories' MESA New York Bight Project, has been a leader in a multi-agency study of the problem. Because of the gravity of the situation, a significant diversion of research effort from regular studies has been made. Several major cruises using chartered and NOAA vessels were carried out beginning in July to assess the extent of the problem and collect data that would lead to understanding the causes. These investigations are being continued.

Reports from sport divers, commercial fishermen, and NMFS scientists since late June agree there has been extensive disruption of faunal communities including mortalities of fish and shellfish along most of the New Jersey coast. Included were important resource finfish species such as red hake, silver hake, summer flounder (fluke), winter flounder, black sea bass, shellfish, including lobster, Jonah crabs and surf clams. The persistence of low oxygen levels poses a special hazard for such sedentary species as the surf clam, an extremely valuable fishery.

While episodes of summer anaexoia had been noted previously, this anaexocic system is unique in terms of area and duration. Historically, such anaexocic conditions are resolved by the autumnal turnover, when the highly-oxygenated surface water cools and displaces the oxygen deficient bottom water, or by summer storms. It was hoped that Hurricane Belle, which brushed the area, would supply the energy for the job, but dissolved oxygen measurements before and after showed its effects to be transitory. Five days after the storm anaexoia was reestablished.

NOAA Awards Luncheon

NOAA's 6th Anniversary Awards Luncheon will be held on Friday, October 8, at 11:30 a.m. in Bolling Air Force Base Officers' Club. Look for the posters in your building giving the name of the key person you should contact to make reservations.

1976 Jefferson and Holm Award Winners Are Announced by NWS

(Continued from page 1)

teer observers receive no pay for their service. Another one-third receive a minimum compensation—averaging $6 a month—to cover expenses for long distance phone calls to NWS Offices or extra mileage if the observer must reach a specific observation point. Most of these reimbursable expenses concern unusually heavy rainfalls or river conditions that may alert the forecaster to flood threats.

The volunteers work with NWS instruments and are visited regularly by NWS Substation Network Specialists, who check the instruments for accuracy.

The nine recipients of the 1976 Jefferson award, named for Thomas Jefferson, who was deeply interested in science and kept a daily record of the weather almost continuously from 1776 to 1816, are:

—Percy E. Batchelor of Jefferson, Okla., who has been the volunteer weather observer at Jefferson since January 1945. His regular weather observations are enhanced by detailed storm data gathered during outbreaks of hazardous or extreme weather. He received the Holm award in 1967 and a Special Service Award in 1970.

—Ross E. Forward of Sheldon, Iowa, who in June 1925 began his rainfall and temperature reports. His rainfall reports provide river and flood forecasting data to the Sioux Falls, S.D., Forecast Office. A retired postman, he was named one of the best observers in the Nation in 1961, and received the Holm award in 1964.

—Stanley Helzerman of Willis, Mich., who began weather observations on his own as a farm boy while still in high school 47 years ago. He has lived all his life on the same farm. An enthusiastic reporter of local weather conditions, he has prepared a climatological summary for his station.

—Oliver W. Holmes of Rockland, Maine, who has been observing and recording temperature and precipitation along the coast of Maine for the past 35 years. He received the Holm award in 1968.

—Andrew M. Johannsen of Shelby, Mont., whose weather observations from his ranch in north central Montana have been of benefit to Montana's agribusiness for the past 51 years. Now retired, he has been active in public affairs all his life and has had full responsibility for the cooperative substation since April 1925. In 1964, he received the Holm award.

—Oliver M. Orendorff of Sallisaw, Okla., an engineer for the city of Sallisaw, who took over the cooperative observer post in January 1930. Since then, with the help of his son, he has never missed a daily check. Now the owner of an appliance store, he not only keeps the weather records, but six years ago added a new duty as river observer.

—Earl U. Slife of Hawarden, Iowa, who for more than 50 years has maintained exceptionally high quality records of the weather in northwest Iowa, reporting to the Forecast Office at Sioux Falls, S.D. A prominent businessman, he is active in community affairs, and received the Holm award in 1964.

—Ruby Stufft of Ellsmere, Nebr., who has provided weather records from her ranch near Ellsmere for the past 55 years, to achieve a family tradition of 75 years of observation from the same substation. Mrs. Stufft, who plans to turn the substation over to her son—the third generation to serve at the same location—received the Holm award in 1966.

—Thomas A. Walker of American Fork, Utah. A National Park Service employee until retiring in 1969, he was the first weather observer at Timpanogos Cave National Monument when the station was set up in 1938. He took observations at Timpanogos Divide and at Bryce Canyon National Park. Since retirement, he is again the Timpanogos Divide observer. The rugged country sometimes dictates extraordinary measures to take the recordings, but he is an excellent skier. He's also an expert on the flora and fauna of his area.

The 35 winners of the 1976 Holm Award—named for a Lutheran minister who took daily weather observations, without instruments, from a site near Wilmington, Del, in 1644 and 1645, and given for outstanding accomplishments in meteorological observations, are: Mary (Mrs. E.B.) Arnold, Purdum, Neb.; Lucille K. Beale, Emmitsburg, Md.; Burdette Bevan, Tooele, Utah; Kenneth O. Bork, Clay Center, Kans.; Henrietta Brandt, Walhalla, S.C.; Maurice F. Brookshier, Hamburg, Iowa; Ray L. Burkholder, Pandora, Ohio; Malcolm F. Byerly, Rotan, Tex.; Prudie B. Corder, Kingston, Okla.; Erwin J. Draper, Red Lodge, Mont.; Horrace M. Gaddis, Palestine, Ill.; Lou Galloway, Pleasant Hill, Ill.; Rufus S. Gilbert, Dorset, Vt.; William B. Gillespie, Jr., Effingham, S.C.; Robert F. Gray, Adams, Oreg.; James D. Hawkins, Buchanan, Va.; Donald T. Jameson, Oberlin, Ohio; James H. Jones, Holdrege, Nebr.; Roy L. Kumm, Winthrop, Wash.; William P. McBrayer, McPreston, Miss.; John E. Culloch, Buchanan, Va. (Posthumous Award); Rudolph Melancan, Jr., Des Allemands, La.; Steve J. Moster, Muenster, Tex.; Fred Nazary, Carthage, Miss.; Loretta Nistler, Delta Junction, Alaska; Allen R. Philbrick, West Branch, Miss.; Julius A. Polansky, Dime Box, Tex.; Edmund Sager, Stephenson, Mich.; Cedric E. Schumacher, Pana, Ill.; Jake H. Stewart, Shawneetown New Town, Ill.; Oran C. Stovall, Bowie, Tex.; Ethelda C. Swigart, Decatur, Ill.; Horace W. Travis, Ord, Nebr.; Ilean Walton, Buckeye, W. and Clarence C. Williams, land, Oreg.

U.S. GOVERNMENT PRINTING OFFICE: 1976-210-929/70

National Oceanic and Atmospheric Administration

ERRATA NOTICE

One or more conditions of the original document may affect the quality of the image, such as:

Discolored pages
Faded or light ink
Binding intrudes into the text

This has been a co-operative project between the NOAA Central Library and the Climate Database Modernization Program, National Climate Data Center (NCDC). To view the original document, please contact the NOAA Central Library in Silver Spring, MD at (301) 713-2607 x124 or Library.Reference@noaa.gov

HOV Services
Imaging Contractor
12200 Kiln Court
Beltsville, MD 20704-1387
July 23, 2010