

NOAA WEEK

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

NOAA Ships, Oceanographers Study Caribbean Circulation

Thirty NOAA oceanographers are among the U.S. scientists participating in an intensive international study of the Gulf of Mexico and the Caribbean Sea. The three-year program, known as CICAR (Cooperative Investigation of the Caribbean and Adjacent Regions), involves the study of all phases of oceanography, including currents, geology, and fishing and biological problems in the Gulf and Caribbean. Investigators, in addition to the United States, are the Soviet Union, Mexico, Cuba, Colombia, Venezuela, England, the Netherlands, and possibly other nations.

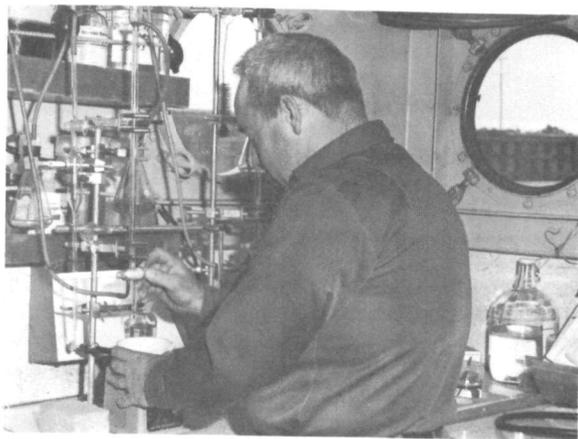
The NOAA scientists, from the Miami-based Atlantic Oceanographic and Meteorological Laboratories, are working aboard the Ships DISCOVERER and PEIRCE during the current phase of the study, which is being carried out over a five-week period ending in November.

The marine scientists are concentrating on an investigation of the tides and currents in the Caribbean and Gulf to determine their chemical properties and distribution, water temperature and salt content, and other marine aspects.

Special attention is being devoted to the Yucatan Current, Florida Current, and Loop Current in an effort to ascertain their role in the circulation of water in the Gulf and Caribbean and the interchange between them and the Atlantic Ocean.

Among the studies being carried out by the ships are measurements of the currents between the Yucatan and Florida Straits with radar-tracked buoys; chemical analyses of deep ocean currents to determine whether they have any special chemical features that would enable oceanographers to trace movement of their waters. Bottom measurements are being conducted in the Yucatan Channel with current meters.

SHENEHON on Lake Michigan For Final Survey of Season



The Lake Survey Center's 65-foot research vessel SHENEHON is making the last of this season's scientific surveys in northern Lake Michigan. The vessel contains a fully-equipped 120-square-foot analytical laboratory for making time-critical analyses. She also contains a completely automated weather station. Every six minutes, 14 different items are recorded on the punched paper-tape output of a teletypewriter. Gyro-compass heading, barometric pressure, wind speed and direction, air and water temperature, solar radiation, relative humidity, and precipitation are among the items recorded.

Sixty open-lake test sites have been established, each of which is covered once during a series of two-week cruises to test and sample the water's physical and chemical properties. This information plus available data will provide input to develop a model or models to be used in planning the best use and development of the regional water and land-related resources. In the photo above, laboratory technician Edward Riker determines the chloride content of a lake water sample during the SHENEHON cruise.

Administrator Meets NMFS Staff



Dr. Robert M. White, NOAA Acting Administrator, visited the headquarters of the National Marine Fisheries Service, Oct. 21, and met many of the Service's employees. Left to right: Philip M. Roedel, NMFS Director; Dr. White; Myra Wells of the Service's personnel office; and Francis Captiva, of the Exploratory Fishing and Gear Research Base at Pascagoula, Miss.

President Nixon Pledges High Priorities For Government's Environmental Programs

President Richard M. Nixon, speaking at the October 8 dedication of Georgia's Marine Resources Extension Center on Skidaway Island, pledged a high priority for pollution abatement.

It is absolutely essential to clean up the environment, not only for the health and well-being of the present generation, but also for the sake of future generations of Americans, Mr. Nixon said.

The President also promised major emphasis on development of marine resources. At the same time, he cautioned, the oceans must be used, but not abused, and a comprehensive knowledge of marine resources is absolutely essential for wise use.

I. B. Byrd, chief of the Division of Federal Aid for the Gulf and South Atlantic Region of the National Marine Fisheries Service, was on hand to answer questions about the Service's Federal Aid program and about Skidaway Institute's catfish culture research projects funded under the program.

Summer Employees Honored For Work at Environmental Labs

Four young people who worked for the Environmental Research Laboratories, Boulder, Colo., last summer under the Department of Commerce Junior Fellow and Summer Aid Programs have received certificates and cash awards for outstanding performance. NOAA Junior Fellows cited were Tim Chacon of Denver, and Harry Allacher and David E. Haflich of Boulder. Frances Garcia of Lafayette was recognized for her work as a Summer Aid. Junior Fellows are selected from the top ten percent of their high school graduating class after recommendation by their counselors. Candidates must have applied for admission to a college as part of the criterion for the program. Summer Aids need not be high school graduates. Prospective Summer Aids are employed through the state employment office.

Three New Lake Survey Charts Available

New editions of three Lake Survey Charts of the Minnesota-Ontario Border Lakes, Charts 818, 820, and 822, are now available. Together, the charts, designed and prepared especially for use in the small, shallow-draft boats that cruise these waters, cover all of Lakes Namakan and Kabetogama. Chart 818 shows the eastern part of Lake Namakan; Chart 820 covers western Lake Namakan; and Chart 822 shows the western end of Lake Kabetogama. This is the first time they have been updated since 1963-64. Excluding hydrography, they include the islands in the area, rivers flowing into the Lakes, and other features of interest to recreational boaters. For a free catalog showing the other charts and publications available, as well as a list of sales agents, write to the Lake Survey Center, 630 Federal Bldg., Detroit, Mich. 48226.

WMO Fellow Trains With Satellite Service

Hee Seung Choi, a World Meteorological Organization Fellow from the Central Meteorological Office in Seoul, Korea, has been assigned to the National Environmental Satellite Service's Applications Group for training in the interpretation and use of satellite data. An Automatic Picture Transmission (APT) station will be installed in Seoul in 1971.

NWS Computer Program Predicts Storm Surge Heights

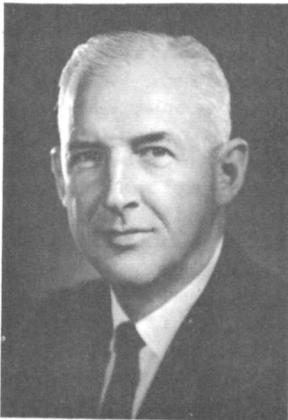
A computer program for predicting the height of hurricane storm surges has been developed by the National Weather Service's Techniques Development Laboratory. The storm surge--an inrushing torrent of wind-driven water--is the hurricane's real killer, rather than high winds. Until now, the forecaster has had to rely entirely on his own experience and judgment in predicting just how high these devastating surges will rise. The new system should improve the accuracy of storm surge prediction and provide forecasters with a valuable backstop. Dr. Chester Jelesnianski developed the program, which is based on a numerical model. The model was tested in real time this year with Hurricanes Becky, Celia, and Felice in the Gulf of Mexico. The computer predictions compared very favorably with the surges that actually occurred.

NOS Conducts Survey in South Carolina

The National Ocean Survey is conducting a 250-mile, 14-county geodetic survey in South Carolina. The five-month, \$120,000 survey will be made along two routes across the state, extending from Dillon to Blackville and from Newtonville to Morgana. The routes extend through the counties of Marlboro, Chesterfield, Kershaw, Richland, Lexington, Aiken, Edgefield, Dillon, Florence, Lee, Sumter, Calhoun, Orangeburg, and Barnwell.

John Gottschalk Takes High Fisheries Post

John S. Gottschalk, formerly Director of the Bureau of Sport Fisheries and Wildlife, Department of the Interior, has been transferred to the National Marine Fisheries Service in the National Oceanic and Atmospheric Administration. Mr. Gottschalk will



serve as Senior Scientist and Assistant to the NMFS Director Philip M. Roedel in defining and developing the role of the NMFS within NOAA.

Terry Named to Tuna Commission

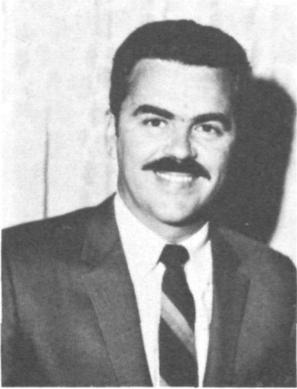


William M. Terry, Acting Deputy Director of the National Marine Fisheries Service, recently became a member of the Inter-American Tropical Tuna Commission. The purpose of the Commission is to maintain the populations of yellowfin and skipjack tuna and other species of fish taken by tuna vessels in the eastern Pacific. Nations which are members of the Commission are: Canada, Costa Rica, Japan, Mexico, Panama, and the United States. Member nations cooperate in gathering and interpreting information to facilitate maintaining the tropical tuna populations at levels to permit maximum sustained catches annually. The newest member of the four-man U.S. Commission, Mr. Terry is shown here (at left) receiving his Presidential Commission from Ambassador D. L. McKernan, Special Assistant for Fisheries and Wildlife to the Secretary of State.

Meteorological Rocket Group Meets in Brazil

The Experimental Inter-American Meteorological Rocket Network, with representatives from Argentina, Brazil, and Spain, as well as the United States, held its sixth annual meeting in Rio de Janeiro, Oct. 15-17. NOAA participants included: Frederick G. Finger and Alvin J. Miller of the Upper Air Branch, NMC; Francis Schmidlin of Wallops Station; and William Schallert of the Environmental Data Service.

National Weather Service Names New Chiefs at Four Facilities



B. B. Christian

Brantley B. Christian, assigned at Nashville, Tenn., since 1966, has been appointed to head the National Weather Service Office at the Palm Beach International Airport. Mr. Christian succeeds Thomas Rush. During the early 1960's, Mr. Christian served in the Weather Service at Jacksonville and Miami. In addition, he has had two tours of duty at Swan Island, and at an outpost station in the Caribbean. A U.S. Air Force weather observer from 1953 until 1957, Mr. Christian entered the National Weather Service at Atlanta in 1959. He attended Middle Tennessee State College at Nashville and Huntington College at Montgomery, Ala.

James G. Georg is the new meteorologist in charge of the Lakeland, Fla., Weather Service Office, replacing Warren O. Johnson, who recently retired. Mr. Georg, who has been principal assistant at the Lakeland station since 1960, earned his bachelor's degree at Florida Southern College and is now completing his requirements for a master's degree at the University of Florida. He joined the Weather Service at Pittsburgh, Pa., in 1946, later transferring to Puerto Rico. He moved to the Lakeland office in 1951. From 1953 to 1962, Mr. Georg spent the summer seasons in Wisconsin operating the special Cranberry Frost Warning Service. He also served as a weather observer and forecaster in the Army Air Corps during World War II.

W. Clyde Conner, National Weather Service hurricane forecaster, has been named meteorologist in charge of the Weather Service Forecast Office at New Orleans, La. Mr. Conner entered the weather service in 1942 at Washington, D.C. The following year he was assigned to a special military support project at Brownsville, Tex. He joined the New Orleans staff in



J. G. Georg



W. C. Conner



D. H. Halligan

1946. Mr. Conner, who holds bachelor's degrees in mathematics and history, did graduate work in meteorology at UCLA and the University of Chicago. In 1959, he was awarded the Department of Commerce Silver Medal for meritorious service, and in 1962, the Department's Gold Medal for exceptional service. These awards were in recognition of his work in coastal weather warnings and hurricane forecasting.

Don H. Halligan, chief, Synoptic Climatology Branch, National Climatic Center since 1965, has accepted the position of meteorologist in charge of the National Weather Service's Rapid City, South Dakota, office. Mr. Halligan will report to his new position, Nov. 1.

Oceanographic Data Exchange Group Meets

The Intergovernmental Oceanographic Commission (IOC) Working Group on International Oceanographic Data Exchange, chaired by Dr. Thomas S. Austin, Acting Director of EDS, held its fifth session at the Palais des Nations in Geneva, Switzerland, Sept. 21-25. Delegates from 16 countries and observers from several international organizations attended the session. Thomas Winterfeld of the National Oceanographic Data Center headed the U.S. delegation, which also included William McMurray of the National Climatic Center and Arnold Gordon of Lamont-Doherty Geological Observatory. William Molo of NODC represented World Data Center A, Oceanography. In addition to the discussion of the IOC programs regarding their impact on international data exchange, the agenda covered a broad range of topics concerning international oceanographic data management.

Restrictions on Weather Radio Rebroadcasts Eased by Federal Communications Commission

The nation's radio and television stations recently gained permission to rebroadcast National Weather Service transmissions made on NOAA's VHF-FM weather-radio frequencies without prior authorization from the Federal Communications Commission. Formerly, radio and television stations had to get special permission to rebroadcast the weather messages and authorization had to be renewed by the FCC annually. Weather Service-owned and operated VHF-FM radio stations currently are transmitting continuous 24-hour-a-day programs of environmental observations, forecasts, and warnings from 24 locations throughout the United States. The FCC's blanket authorization to rebroadcast National Weather Service transmissions is granted on the condition that the radio and television stations make their rebroadcasts within one hour of receipt of the message from the Weather Service, that if advertisements are given in connection with the rebroadcast the ads shall not directly or indirectly convey an endorsement by the government of the products or service advertised, and that credit be given to indicate that the rebroadcast message originated with the National Weather Service.

Alabama Survey Launched by NOS Field Party

A Federal survey of a 3000-square-mile area in Alabama has been launched by the National Ocean Survey. The four-month, \$100,000 project will be carried out by an 18-man field party, headed by James L. Cook, in an area bounded by Tuscaloosa, Wilsonville, Maplesville, and Greensboro for state, local, and private mapping and engineering projects. Using portable steel towers, the party will establish more than 80 geographic positions in the five-county area.

Kuhn Authors New Geophysics Book Chapter

Dr. Peter M. Kuhn, meteorologist for NOAA's Atmospheric Physics and Chemistry Laboratory, Boulder, Colo., is the author of a chapter titled "Applications of Thermal Radiation Measurements in Atmospheric Science" in the newly published book, "Advances in Geophysics, Volume 14." The new book was published by Academic Press, Inc., New York.

Russian Scientist Visits ERL



Madame Valeriya Alekseyevna Troitskaya of the Institute of the Physics of the Earth, USSR Academy of Sciences, recently visited the Environmental Research Laboratories' headquarters, Boulder, Colo. She is in the United States under an exchange agreement between the U.S. National Academy of Sciences and the USSR Academy of Sciences, which provides for ten prominent scientists of each nation to visit the other.

Madame Troitskaya was welcomed to NOAA's Boulder offices by (from left) Dr. Victor P. Hessler, Allen H. Shapley, ERL Director Dr. Wilmot N. Hess, and Dr. Wallace Campbell.

In addition to discussions with various ERL scientists, she held a formal seminar on her research in geomagnetic field micropulsations. During the month-long U.S. visit, Madame Troitskaya is also scheduled to visit the University of Texas, University of California at Los Angeles, Stanford Electronics Laboratory at Stanford University, the Geophysics Institute of the University of Alaska, the Woods Hole Oceanographic Institution, and the National Science Foundation.

Voice of America Interviews Schloemer of EDS

Robert W. Schloemer, EDS' Deputy Director for Climatology, was interviewed by the Voice of America, Oct. 19. VOA has a program entitled "Answers to Questions about the United States." The five-minute interview was taped to provide an initial reply to general inquiries with regard to the climate of the United States.

E. Stoll, Volunteer Observer, Honored for Weather Service



Edward H. Stoll, of Elwood, Nebr., was lauded by federal, state, and local officials at ceremonies held Oct. 15 to commemorate his 65 years of service as a volunteer observer for the National Weather Service.

Among the many expressions of appreciation for his outstanding service were messages and letters from the President and Vice President of the United States, both Nebraska State Senators, the Nebraska member of the House of Representatives, the Secretary of Agriculture, the Secretary of Commerce, and Dr. Robert M. White, NOAA Acting Administrator. Mr. Stoll received an Outstanding Citizen Award from the Chamber of Commerce in southwestern Nebraska. Mr. Stoll (above) is shown responding to the good wishes of more than 200 of his fellow citizens who gathered to honor him.

Surplus Oceanographic Equipment Wanted

Nelson C. Ross, NODC West Coast Liaison Officer, has had two requests for surplus oceanographic equipment. Both the Instituto de Oceanologia, Baja California, and the Immaculate Heart College marine station at Las Cruces, Baja California, need sextants, current meters, Nansen bottles, and precision depth-recorders. Anyone who could assist in providing or obtaining the above-mentioned or other surplus oceanographic equipment should write to Leon LaPorte, NODC, EDS, NOAA, Department of Commerce, Rockville, Md. 20852, or call (202) OX3-3754.

University Assignment Information Scheduled for Distribution Next Week

A Training Opportunity Announcement covering the details for making application for a 1971-72 full-time university assignment will be distributed to all employees during the coming week. Closing date for applications will be Nov. 30, 1970. Contact your servicing Personnel Office if additional information is required. Employees in the Washington, D. C., area should contact the Career Development Branch (AD44).

Computer Program Publication Available

Computer Programs in Oceanography, Publication C-5 in the Catalog Series (Second Revision), compiled by C. Dinger, is now available from the National Oceanographic Data Center, Washington, D.C. 20390. Tel. OX3-3754.

As specified in the "Introduction", this revision "... is issued to foster awareness of computer programs related to oceanography and to facilitate their exchange between interested groups." The catalog only begins to reflect the programs originated by NODC for the new in-house IBM 360/40 computer. Planned for the future is a revised edition of the NODC publication G-15, User's Guide for NODC's Data Processing Systems that will contain updated computer programming information.

WMO Hydrological and Meteorological Conference Convenes in Switzerland

More than 120 delegates from 55 nations attended the World Meteorological Organization's Conference for Hydrological and Meteorological Services, held recently in Geneva, Switzerland. The delegates met to consider Technical Regulations in WMO for Hydrology, ways the World Weather Watch can be planned and developed for hydrology, and the strengthening of WMO activities in hydrology. Representing the United States from NOAA were Max Kohler and Allen Flanders of the National Weather Service's Office of Hydrology, and Gordon Cartwright, Science Attache, U.S. Mission in Geneva. Mr. Kohler was elected Chairman for the Technical Conference.

Three State Airport Surveys in Progress

National Ocean Survey teams are conducting field surveys of Bowman Field, Louisville, Ky.; Mankato (Minn.) Municipal Airport; and Lewiston-Nez Perce County Airport, Lewiston, Idaho. Results of the surveys will appear on Airport Obstruction Charts to be published in five or six months.

Kempton/Plato Chosen for Ice Island Duty

Marvin Kempton and Charles Plato have been selected for assignment on Ice Island T-3 for six-month tours of duty. Mr. Kempton replaces David Holland, electronic technician. Mr. Plato, currently serving at the Naval Fleet Weather Facility, Suitland, Md., is a former Army Upper-air Observer, who served 18 months at Fort Greely, Alaska. He replaces Oliver Hess, who has been selected for the Swan Island staff.

Lake Survey Center Historical Charts Offered for Public Sale

The Lake Survey Center has some interesting bits of American history available to the public in the form of early charts and field drawings. The earliest chart is a "Plan Topographique du Detroit - Lac Erie Avec Le Lac St. Clair," made in 1796 under General George Henry Victor Collot, an officer in the army of Napoleon. The chart is in French, but a brief note in English explains its origin. Two small sketches show the "town of Detroit" and "Fort Erie." Black and white copies sell for \$1.00 each.

Another is the "Map of Hydrographic Basin of the Upper Mississippi River, 1843," prepared from astronomic and barometric observations, 1836-1840, under the direction of J. N. Nicollet. It shows parts of the States of Illinois and Missouri, the Iowa and Wisconsin Territories, and the general location of various Indian countries, such as Winnebago, Kikapoo, Pawnee, Omaha, and others. A black and white print is available for 65 cents.

Civil War enthusiasts will appreciate the 1865 map which shows the "Marches of the Union Army under Major General W. T. Sherman, 1863-65." The map covers an area from Washington, D. C., to below Brunswick, Ga., and from the Atlantic Ocean to the Mississippi River. Copies in sepia tone are made from the original copper engraving discovered in 1965. The cost is 75 cents a copy.

Computer Simplifies Upper-Air Soundings

The National Weather Service has a new, small computer for processing upper-air data obtained from instrumented balloons. The data consists of temperature, pressure, relative humidity, and wind speed and direction readings taken at successive levels through which the balloons rise. The "minicomputer" system allows one man to do a job that formerly required two. It was designed primarily for use at isolated weather stations in Alaska and the Pacific, which do not have access to time-share computers. The new system is now being used routinely on all upper-air soundings at the weather service station, Sterling, Va. Operational checkout will be completed in about three months.

NOIC Oceanographic Instrument Survey Data Being Tabulated

The National Oceanographic Instrumentation Center is currently reducing the results of a broad survey conducted throughout the oceanographic community in an effort to determine the priority requirements for oceanographic instruments and related equipment. The survey was conducted in response to a chartered function of the Center, which calls for a cooperative government, academic, and industrial requirements assessment.

The response to date has been significant with 294 government, 590 industrial, and 303 academic replies. The initial distribution was made to subscribers to the Center's Instrument Fact Sheets and Technical Bulletins. These subscribers include persons in management and scientific research, teachers, documentation specialists, and students in government, universities, and private industry.

The respondents ranked their interests as very important, important, and not important for 25 different instrument types, ranging from water current meters through hydrophones, pressure sensors, salinometers, and wire rope. Detailed results of the survey will be distributed in the near future.

Weather Exhibit Displayed in Norfolk Library



Hurtis Smith, National Weather Service meteorologist in charge of the Norfolk, Va., weather office, and his staff arranged the exhibit (above) to commemorate the 100th anniversary of the Norfolk Public Library System. The exhibit will remain on display for the remainder of the year.

Length-of-Service Awards

The following NOAA employees became eligible to receive length-of-service awards during September and October:

National Weather Service Central Region

35 years - Ray E. Johnson, RFC, Kansas City, Mo. 30 years - Loren Shipp, Alamosa, Colo.; Loren W. Gearhart, Cheyenne, Wyo.; Robert G. Twa, Muskegon, Mich.; Aubrey E. Burgtorf, Flint, Mich.; William R. Gast, Colorado Springs, Colo.; Howard P. Roudebush, Chicago, Ill.; and Leon Schirm, NSSFC, Kansas City, Mo. 25 years - Bertel E. Hall, Topeka, Kans.; William P. Clarkson, Colorado Springs, Colo.; and Earl E. Belanger, International Falls, Minn. 20 years - Clarence L. David, NSSFC, Kansas City, Mo.

Mid-Continent Field Area, National Ocean Survey

30 years - Marvin A. Randall, Operations Division, Kansas City, Mo.

National Weather Service Southern Region

40 years - Sam R. Huribut, Apalachicola, Fla.; and Emil T. Lange, Fort Worth, Tex. 35 years - Alden McArthur, Atlanta, Ga.; and Galen A. Schreier, Austin, Tex. 30 years - Edward C. McEowen, Fort Worth, Tex.; Ralph S. Jones, Keiser, Ark.; Robert F. DeLong, Key West, Fla.; Fank P. Lamb, Macon, Ga.; Jay Watts, New Orleans, La.; Vernon L. Baldwin, Jr., Waco, Tex.; Wendell B. Logan, Albuquerque, N. M.; William R. Conyers, Atlanta, Ga.; and Arthur E. Walkowiak, Lubbock, Tex. 25 years - Leonard L. Wills, Jr., Fort Worth, Tex.; James H. Miller, New Orleans, La.; Delbert P. Samsel, Oklahoma City, Okla.; Edward R. Miller, San Juan, P. R. 20 years - Arthur F. Simcox, Jr., Memphis, Tenn.; Arthur H. Mason, Tampa, Fla.; Mary S. Cotten, Fort Worth, Tex.; Joy C. Wells, Amarillo, Tex.; and Ivy N. Keller, Baton Rouge, La.

National Weather Service Western Region

40 years - C. Robert Elford, San Francisco, Calif. 30 years - Robert F. Allen, Phoenix, Ariz.; Bernard Dubofsky, Seattle, Wash.; Niilo E. Koski, Pendleton, Ore.; Ivan S. Roberts, Tucson, Ariz.; and Gordon C. Shields, Los Angeles, Calif. 20 years - Roland R. Finch, San Francisco.

Three Handicapped Employees Considered for President's Trophy

The names of three NOAA employees have been submitted to the Department of Commerce to be considered for the President's Trophy, awarded to the "Handicapped American of the Year." James Horton, a weather service specialist at Shreveport, La., has worked for the National Weather Service for the past 15 years despite an affliction of rheumatoid arthritis. William Krohn, a deaf mute, has been an engineering draftsman for two years with the Environmental Research Laboratories, Boulder, Colo. Charles Neumann, who contracted polio in 1953 while working with the U.S. Navy Hurricane Hunter Squadron, is a meteorologist currently working in support of NASA's manned spaceflight program. The President's Trophy is awarded annually to a useful, active, handicapped American as an incentive to encourage and promote the employment of other disabled persons.

Mt. Vernon, Illinois, Airport Surveyed

A field survey of Mt. Vernon-Outland Airport, Mt. Vernon, Ill., is being conducted by a National Ocean Survey team, headed by Lt. Dennis L. Valdovinos.

Foreign Visitors Tour NESS Facilities

R. Seaman, Commonwealth Research Center, Melbourne, Australia, and Chief Petty Officer Enrique Agustin of the Meteorological Service, Argentine Navy, were recent visitors to NOAA's National Environmental Satellite Service, where they were briefed by various segments of the organization, including the Planning and Coordination Group, Application Group, Meteorological Satellite Laboratory, and the Data Processing and Analysis Division.

Raymond T. Gillam, Retired Ohio MIC, Dies

Raymond T. Gillam, former meteorologist in charge of the National Weather Service's Dayton, Ohio, office, died Oct. 29. Mr. Gillam was in charge of the Dayton office from 1952 until his retirement in February 1969.

Items to be considered for publication in NOAA WEEK should be submitted to: Office of Public Information, NOAA, Room 804, Bldg. 5, Rockville, Md. 20852. Phone (301) 496-8243.

National Oceanic and Atmospheric Administration

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