

NOAA WEEK

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

Joint Project Watches for East Coast Winter Storms

Ships, planes, satellites, and a giant instrument-packed buoy, have been put into service in a combined Federal effort to provide the observations needed by the National Weather Service to predict the sudden onset of winter storms along the east coast this year. The massive watch will continue through next March.

During the 1970-71 winter season, particular attention is being focused on a 150-mile coastal strip along the storm-breeding ocean area off the eastern United States. For many years, storms generated in these offshore waters stood a good chance of going undetected. Warnings sometimes were too late to be effective.

Lending assistance to the National Weather Service's east coast winter storms watch and warning effort are several other NOAA components; the U.S. Coast Guard and Federal Aviation Administration of the Department of Transportation; and units of the U.S. Navy and Air Force of the Department of Defense.

A 10-mile-square "ocean station" about 200 miles east of the Virginia Capes and 200 miles south of Martha's Vineyard, Mass., is being continuously occupied by Coast Guard vessels during the winter season. National Weather Service observers aboard the ships are making frequent surface and upper-air meteorological measurements. The Coast Guard is also asking about weather conditions from other ships which pass through the area under observation. In addition, the Coast Guard is providing information obtained from an experimental data buoy--the 40-foot XERB-1 which is moored in the Atlantic about 100 miles east of the Virginia-North Carolina border.

Routine, daily reconnaissance flights in the storm-breeding area are being made by the Air Weather Service of the U.S. Air Force. During threat or storm situations, these sorties can be diverted to selected reconnaissance tracks.

The U.S. Navy is flying meteorological and oceanographic data-gathering flights, up to three a week, through the data-sparse ocean area of concern.

Aircraft reconnaissance as a backup for the Department of Defense's flights will be made by ERL's Research Flight Facility. The Federal Aviation Administration is providing air traffic control, communication, and flight assistance services to the weather reconnaissance flights. The National Environmental Satellite Service offers support by giving weathermen daily satellite data from the area under scrutiny.



XERB buoy

Earthquakes Alter Building Vibrations, Seismologists Find

When a 1968 earthquake affected strong-motion accelerographs in 22 Los Angeles and Pasadena buildings, ranging from six to forty-two stories high, it provided the first opportunity to study the effects of a large earthquake on a cluster of modern multi-storied structures.

Scientists at the NOS Seismological Field Survey in San Francisco have analyzed the data and found that the earthquake significantly altered the normal vibration patterns of all buildings in the group.

The accelerographs, required since 1965 in certain structures in Los Angeles, traced both the periods of vibration during which the buildings swayed and changes in the speed of their motions. The machines are normally installed at the ground level, midsection, and the top of a building.

All buildings vibrate or sway in response to such forces as winds, traffic, heavy machines, or earthquakes. Each structure has its own characteristic period, or time in seconds, to complete one cycle of vibration.

After analyzing the accelerograph records from the 22 Los Angeles-area buildings, William K. Cloud, head of the NOS facility, concluded that the earthquake caused lengthened periods of vibration in all buildings in the group, which included both reinforced concrete and steel-framed structures.

Some periods were 35 percent longer than those caused by light winds. Peak accelerations or changes in the speed of the motions varied considerably.

Cloud said the study revealed that the 42-story 445 Figueroa Street building, the tallest in Los Angeles, swayed once every 3 to 3.82 seconds during the earthquake. No determination was made of how far the building swayed.

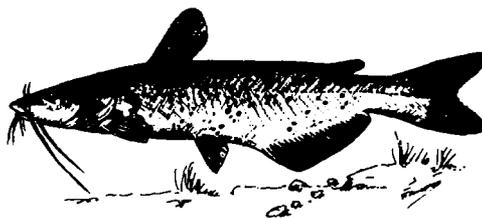
The accelerographs were activated by the earthquake of April 8, 1968, in the Borrego Mountain, 135 to 155 miles from the buildings. The earthquake was of a magnitude of 6.5 on the Richter scale, a mathematical formula employed by seismologists to gauge the strength of earthquakes. The Borrego Mountain earthquake was considerably smaller than the San Francisco earthquake of 1906, which had a magnitude of 8.3. The largest earth tremors recorded have been of an 8.9 magnitude.

Nutrition for Channel Catfish Studied by Fisheries Service

Channel catfish fed menhaden oil grow faster and cost less, recent studies indicate. The effects of oil-supplemented diets on growth rates and quality of channel catfish were compared during a cooperative program between NOAA's National Marine Fisheries Service Technological Laboratory at Seattle, Wash., and the Bureau of Sport Fisheries and Wildlife in the Department of the Interior. Young channel catfish fed a standard commercial ration supplemented with menhaden oil gained 21.6 percent more weight than those fed only the standard ration. (Menhaden are small oily fish, used primarily as an additive in poultry feeds.)

A third group of catfish fingerlings, fed on the standard ration supplemented with corn oil, gained only 3.7 percent more weight than those on the standard ration.

The three groups were raised to market size in 24 weeks. At the end of this period, both experimental groups were put on the standard feed as a "finishing ration." A taste panel compared the eating quality of the three groups at the end of the growth period, and again after two, three, and four weeks on the finishing diet. Panel members, for the most part, considered the flavor of the fish raised on the menhaden oil supplement acceptable, although somewhat poorer than the flavors of the other two groups. The judges also noted an improvement in flavor two weeks after the menhaden oil supplement had been discontinued. Additional flavor evaluations will be made when the fish have been in frozen storage for three months, and again after six months in storage. Meanwhile, preliminary estimates indicate that the catfish farmer using menhaden oil in catfish would save .8 of a cent per pound of fish grown.



CHANNEL CATFISH

Weather Service Employees at Mississippi Test Facility Receive NASA Group Award



Dr. Robert M. White, NOAA Acting Administrator (right), congratulates John Rhyne of the Mississippi Test Facility.

A National Aeronautics and Space Administration group achievement award was presented Nov. 9 to National Weather Service employees at NASA's Mississippi Test Facility in Bay St. Louis, Miss. The group was cited "for outstanding achievements in support of the successful completion of the Saturn/Apollo static-test program at the Mississippi Test Facility and, thereby, the manned lunar landing." The last scheduled static test of Saturn V Apollo rocket stages was conducted at the facility on Oct. 30, 1970.

John Rhyne, Weather Service Official in Charge at the Mississippi Test Facility, accepted the award in behalf of all NWS personnel associated with the Mississippi Test Facility from 1962 through 1970. Present employees, in addition to Mr. Rhyne, are Harry A. Ulmer, electronics technician; Douglas R. Grantham and Marion H. Grantham, meteorological technicians.

Attending the honor awards ceremony were Mississippi Governor John Bell Williams; Senator John Stennis; Representative William Colmer; Dr. Robert M. White, NOAA Acting Administrator; Dr. George M. Low, NASA Acting Administrator; Dr. Wernher von Braun, NASA Deputy Associate Administrator; Dr. Eberhard Rees, Director, Marshall Space Flight Center; and Astronaut Fred W. Haise.

Low Water Warning System Active During Detroit Storm

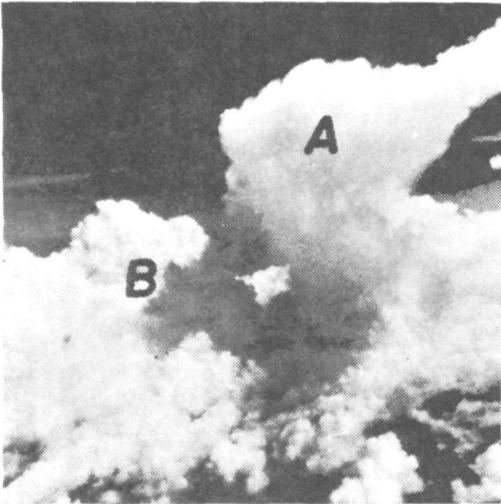
The low-water warning system broadcasts for the Detroit River, in which the Lake Survey Center collaborates with the U.S. Coast Guard, were put to good use last week when high winds with gale force gusts as high as 46 miles per hour swept the metropolitan Detroit area. The strong westerly winds blew water away from a shipping channel causing a 36-hour "traffic" jam during which one freighter was stranded and 47 vessels tied up in the Detroit River.

The low-water warnings for the lower Detroit River (based on Lake Survey Center water-level bulletins) are broadcast from the Belle Isle Coast Guard Station. The system is in effect 24 hours a day, seven days a week, all year around. Broadcasts are normally made every two hours, but in cases such as those of Monday, November 23, they are made much more often. Records of the Lake Survey Gibraltar gage in the lower Detroit River, telemetered for reading at the Coast Guard's Belle Isle Station, indicate that levels during the storm period reached 19 inches below Low Water Datum.

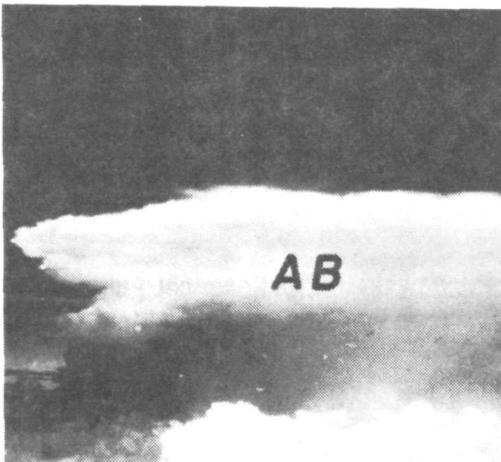
Mrs. B. Pijanowski, NOIC Chemical Engineer, Addresses IEEE Geoscience Electronics Group

Mrs. Barbara Pijanowski, a chemical engineer in the Testing Division of the National Oceanographic Instrumentation Center, was the speaker at the November meeting of the Washington Chapter, IEEE Geoscience Electronics Section. Her presentation, "Detection of Dissolved Oxygen," included demonstration of various instruments that are used to determine and/or measure the amount of dissolved oxygen in water, an important element in oceanography as well as in control of water pollution. She was assisted by Harry Fried, an NOIC Electronic Technician. She elaborated on the Dissolved Oxygen Testing program begun in July 1970 and on the problems involved in the testing of such instrumentation. In addition to laboratory tests, the instrumentation testing program includes field tests of the instruments at sea on an oceanographic vessel. Mrs. Pijanowski has participated in several such field tests and looks forward to field testing the oxygen detector currently under laboratory tests.

ERL Scientists Report on Successful Rainmaking Experiments



3:57 p.m., EDT

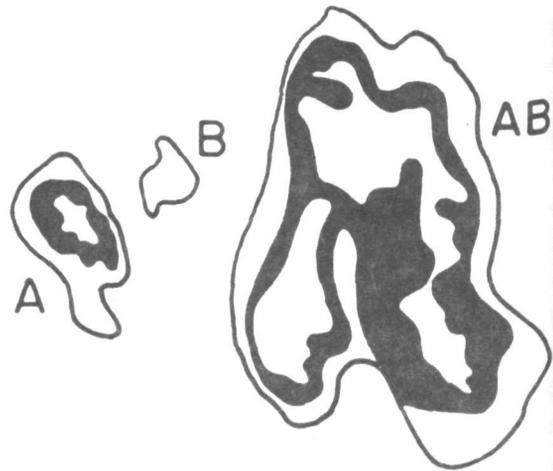


4:53 p.m., EDT

The natural merger of two cumulus clouds on July 16, 1970, stimulated tremendous growth and rainfall production. The rainfall produced by the merged clouds was 22 times greater than that of un-merged pairs. In the radar pictures, inner white areas indicate more than .68 inches of rain per hour; black, over .35; and outer white, over .01.

A team of NOAA scientists reported this week that precipitation from individual cumulus clouds increased as much as seven-fold in what may be the most careful and successful rainmaking experiments to date.

Dr. Joanne Simpson and Dr. William L. Woodley of the Environmental Research Laboratories described the experiments



4:04 p.m., EDT

4:53 p.m., EDT

Dec. 1, at the International Conference on Meteorology in Tel Aviv, Israel. Presenting their report, Dr. Woodley said: "The precipitation enhancement observed in isolated experimental clouds over south Florida resulted beyond reasonable doubt from seeding with silver iodide."

Following this achievement, the scientists mounted a preliminary seeding experiment aimed at promoting cloud mergers and early results suggest that an even greater proportion of water may be released from groups of clouds. In one observed cloud merger which occurred spontaneously, rainfall increased an estimated 22 times over what it would have been if the clouds had remained isolated.

During their 1970 operations, April 15 through July 19, Drs. Simpson and Woodley seeded 13 individual clouds and treated 16 other clouds as unseeded controls, in order to compare rainfall.

Fair-day seeding resulted in a seven-fold rainfall enhancement, and rainy-day seeding diminished precipitation by about 20 percent.

Large clouds generally rain more than small ones. One of the objectives of the single-cloud experiment, therefore, was to stimulate the clouds to grow. Drs. Simpson and Woodley were interested in relating growth and rainfall.

The 13 seeded clouds grew an average of 6,200 feet more than the 16 unseeded experimental clouds. All of the seeded clouds reached over 31,000 feet, or cumulonimbus stature (almost always as-

(continued)

Rainmaking (continued)

sociated with heavy rain). Six of the unseeded controls did not make it to 31,000 feet.

The single-cloud experiment turned up many clues as to how to conduct the larger-scale, multiple-cloud seeding effort. Natural cloud mergers, which plagued observations of single clouds and which the researchers strenuously tried to avoid, turned out to be extremely valuable and informative. Said Woodley: "The most striking feature of mergers is the great increase in water production following the union of the clouds. There is a synergistic effect here, an invigoration of the merged system, as a result of which the increase often is far greater than the sum of the water production from the component clouds."

As a consequence of the single-cloud seedings and the merger observations, the NOAA scientists decided that economical rain enhancement would be possible only if seeding could promote cloud mergers and other more complicated, and potentially more productive, cloud systems.

Between June 29 and July 18, there were four multiple-cloud seeding days and two control days, in which seeding was simulated. Clouds that were close together were seeded in an attempt to get them to amalgamate into what meteorologists call mesoscale systems up to a few-hundred square miles in area. An average of about 15 clouds per day were seeded on the four days.

Interpreting the multiple-cloud experiment findings, Drs. Simpson and Woodley said: "Although the sample size does not permit definitive conclusions, the results are encouraging and consistent with expectations. Three of the four most productive (in terms of rainfall) days were seed days, while the one highly productive control day was so disposed naturally."

The program was a joint effort by the Experimental Meteorology Laboratory (Dr. Simpson, director) of NOAA's Atlantic Oceanographic and Meteorological Laboratories, Miami, Florida, and the Naval Research Laboratory's Atmospheric Physics Branch. Support was provided by NOAA's Research Flight Facility, Miami; the University of Miami; NOAA's National Weather Service; the U.S. Air Force; and the Department of the Interior's Bureau of Reclamation, Denver, Colorado.

FSEE Requirement Eliminated For Transfer to Some Positions

The Civil Service Commission recently announced that Federal employees no longer have to pass the Federal Service Entrance Examination for inservice placement or promotion to certain professional positions. Included are the following occupations at grades GS-5 and 7: Safety Management, Personnel Management, Management Analysis, Budget Administration, Public Information, Writer and Editor, and Technical Writer. The test may still be used, without a passing score and not on a pass-fail basis, as one of several factors to be considered in ranking employees for entry into these occupations. If the test is used, the test score may be considered only in combination with other measures of ability (interview results, evaluation of experience and training, supervisory evaluations of performance, and appraisals of employee potential.)

Certain Marylanders Exempt From Hatch Act During Special Election Set for January 26

Federal employees covered by the Hatch Act who live in Prince George's County may take an active part in the campaign and special election to be held on January 26, 1971, to choose a County Executive and additional members of the County Council under the new Prince George's Charter. Since candidates will be listed on the ballot without party designation, the special election will be nonpartisan and the prohibitions of the Federal Hatch Act do not apply. This means that a Federal employee may file as a candidate for any of the offices to be filled in the special election. Federal employees also may be active as campaign workers in the election.

In future, elections for these offices will be partisan, and participation by Federal employees will be limited in accordance with special rules that are applied under the Hatch Act to Prince George's County and certain other communities in the Washington, D. C. area.

Michigan's Lake Shorelines Top 2,000 Miles

Records of the Lake Survey Center disclose that the inland State of Michigan (which borders on four of the five Great Lakes) has more than 2,000 miles of lake shoreline.

25 Weather Service Western Region Supervisors Complete Courses



Twenty-five National Weather Service Western Region supervisors completed the courses, "Introduction to Supervision," and "Personnel Administration for Supervisors," recently in Salt Lake City. Tony Mackel, NOAA Career Development Branch, conducted the "Introduction to Supervision" course. Elmer G. Neumann from NOAA's Labor-Management Relations Office, assisted with a lecture on Labor-Management Relations. Members of the Western Region Personnel Office conducted the "Personnel Management for Supervisors" session with the assistance of Mr. Mackel, who also made a presentation on race relations, using the film "Black-White-Uptight." Members of other Western Region Divisions, as well as John P. Scanlon, chief, Surface Analysis Branch, NMC, also briefed

the supervisors. Harry Miller, NWS Communications Division, and Richard Boire from the Alden Facsimile Company, brought the group up to date on some of the advances in communications.

The participants in the courses shown here are: Seated, left to right, Clayton Call, Reid B. Gardner, Hazen H. Bedke, (Director, Western Region), Tony Mackel, James D. Wakefield, Ray Hall. Standing, left to right, are: Carl Keith, Joseph Ganser, James Steiner, Robert Lucas, Claire Jensen, Victor Cotten, Wayne Johnson, David Powel, Robert Kirkpatrick, Ronald Surface, Howard Hybskmann, John Fassler, William Chapman, Vincent Callaway, Samuel Sigurdson, Ross LaPorte, Lloyd Heavner, Robert Small, Robert Ingram, Dale Harris, Ronald Martin, and Bud Reanier.

Manhattan College To Hold Summer Institute

The 18th Summer Institute in Water Pollution Control will be held at Manhattan College, Bronx, N. Y., in 1971. The one-week courses will be offered concurrently, May 24-28, for advanced study in Analysis of Streams, Estuaries and Coastal Waters and Biological Waste Treatment. An additional three-day course will be introduced, June 1-3, in Advanced Topics in Mathematical Modeling of Natural Water Systems. Registration fee

for the one-week course is \$225.00 and \$150.00 for the three-day course. This Institute, supported jointly by Manhattan College and the Federal Water Quality Administration, has available a limited number of stipends and travel allowance for candidates associated with universities and governmental regulatory agencies. For further information, contact: Donald J. O'Connor, Environmental Engineering and Science Program, Manhattan College, Bronx, N. Y. 10471.

NWS Director Reorganizes Staff

The Director of the National Weather Service has reorganized his Office to provide increased staff assistance in the areas of executive affairs, resources management, and manpower utilization. The reorganization involves the establishment of three staff offices to replace the Office of the Director, Executive and Technical Services: Executive Affairs Staff, Resources Management Staff, and Manpower Utilization Staff. The Engineering Division, formerly under the Director, Executive and Technical Services, will also report directly to the Director, NWS.

Robert H. Reece, former special assistant to the Director, Executive and Technical Services, has been named chief, Executive Affairs Staff. This office will provide executive support and assistance to the Director and will manage the NWS directives system.

Richard H. Hagemeyer has been named chief of the Resources Management Staff (see NOAA Week, November 13, 1970).

James K. Huntoon, former special assistant to the Director, Executive and Technical Services, has been named chief of the Manpower Utilization Staff. This office will provide managerial and technical staff assistance required to coordinate the management of the NWS personnel program and to effectively utilize its manpower.

Dr. Austin Inspects Asheville Data Centers

Dr. Thomas S. Austin, Acting Director of NOAA's Environmental Data Service spent Nov. 18-20 at the National Climatic Center, the Seismological and Geodetic Data Centers, all elements of EDS at Asheville N.C. The visit was part of a continuing effort to coordinate activities of the National Oceanographic Data Center, the National Climatic Center, and the National Geophysical Data Centers. This will enable EDS to be more responsive to multidiscipline requirements involving the complete environment of water, land, and air.

NMFS Recipes Are Popular 1970 Sales Item

Publications produced as sales documents by the National Marine Fisheries Service returned \$45,352.90 to the Federal treasury in Fiscal Year 1970. This represented sales of 112,630 publications, most of which were fish recipe booklets.

Three Employees Are Granted Commerce Dept. Fellowships

Lt. Cdr. Christian Andreasen, Tillman F. Gladney, and James F. Lander are participating in the Department of Commerce Science and Technology Fellowship Program for 1970-71. Each year, the fellowship program brings together scientists and others with management responsibilities to study national and international issues related to science and technology. During the nine-month assignment, each participant works in another agency, in an activity related to his speciality. Through this professional career-development program, the Department hopes to develop potential leaders for future Commerce or government-wide activities.

Lt. Cdr. Andreasen, a member of the NOAA Commissioned Corps since 1963, has been assigned to the Department of General Services of the District of Columbia government.

A senior program analyst in NOAA's Office of Plans and Programs, Mr. Gladney is working in the Post Office Department's Bureau of Research and Engineering, Office of Technical and Advanced Planning, under the fellowship program.

Mr. Lander, who is chief of the NOS National Earthquake Information Center, has been assigned to the Office of Emergency Preparedness.

Workshop Proceedings To Be Published

Sixteen papers on economic and interdisciplinary aspects of fishery management will be published in the proceedings of a recent workshop sponsored by the Division of Economic Research of the National Marine Fisheries Service. Held in College Park, Md., the workshop was attended by 60 persons from broad research backgrounds, including representatives from the British Whitefish Authority, the Organization for Economic Co-operation and Development, the Food and Agricultural Organization of the United Nations, and the Canadian Department of Fisheries and Forestry, as well as representatives of U.S. government agencies and universities. Research topics ranged from production economics and bio-economic models to general discussions of management for both conservation and economic purposes, the political framework for management, and the multiple social problems that might be involved. Publication of the proceedings will be announced by NMFS at a later date.

Express Bus Service to Washington Science Center Available

For NOAA employees who live in Washington, D.C., and must rely on public transportation to the Washington Science Center, the current schedule for the special "Capital Flyer" express bus service is as follows:

OUTBOUND A.M.

INBOUND P.M.

Route O-7

Cardozo to and from
Korvette's Shopping Center

Leave 10th & U Sts., N.W.	6:30	7:00	8:00	8:30
18th & Columbia	6:35	7:05	8:06	8:36
Rockville Pike & Grosvenor	7:03	7:33	8:36	9:06
Arrive Korvette's	7:20	7:50	8:54	9:24
First "OFF" stop: NIH				

Route O-7

Leave Korvette's	4:00	4:30	5:35
Rockville Pike & Grosvenor	4:15	4:45	5:50
18th & Columbia	4:47	5:17	6:18
Arrive 10th & U Sts., N.W.	4:54	5:24	6:25
Last "ON" stop: NIH			

Route O-1

Cardozo to and from
Korvette's Shopping Center
Via Old Georgetown Road

Leave 10th and U	7:45
18th & Columbia	7:51
NIH	8:19
Arrive Korvettes	8:41

Route O-1

Boarding Stops in Morning:
10th and U, N.W.
14th and U, N.W.
16th and U, N.W.
18th and Columbia, N.W.
You may get off at the above
stops in the evening.
Stops apply to Route O-7 as
well.

Leave Korvette's	5:00
NIH	5:19
18th & Columbia	5:49
Arrive 10th & U	5:56

Further information is available from the Employee Relations Branch, Personnel Division, Room 224, Bldg. 5, extension 8105.

Reimbursable Projects Now Funded by NOAA

The President's Executive Order 11564 of October 6, 1970, transferring certain Navy and Coast Guard elements into the Department of Commerce for the establishment of NOAA, also provided for direct funding by NOAA of three programs previously operated by the Weather Service as reimbursable projects. These are the \$1.6 million meteorological program aboard Coast Guard vessels at six ocean stations, formerly funded by the Navy; operation of a hydroclimatic network of nearly 3000 rain gages, supported since 1940 by the Corps of Engineers (\$850,000 in FY 1971) to provide data for planning hydrologic structures; and the Navy's \$80,000 support providing for a second daily upper-air observation at Majuro, Truk, Ponape, and Koror in the Pacific Trust Territories.

Peterson To Head Duluth, Minn., NWS Facility

Leonard E. Peterson has been named Official in Charge at the Weather Service facility at Duluth, Minn. Mr. Peterson has been with the NWS for 14 years. He transferred to Duluth from Sault Ste. Marie, Mich., in 1960.

Corrections

In the NOAA WEEK item "Documentation Forms Explained" that appeared on page 7, vol. 1, no. 7, the name of the NOAA component should have read National Oceanographic Data Center and the telephone listing as 113-3754.

The new health insurance rates listed in col. 4 of the news item "Health Benefit Plan Premium Rate Changes Set for January 1971" are those rates effective January 1, 1971, not January 1, 1970. (See NOAA WEEK, vol. 1, no. 8, page 6.)

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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