

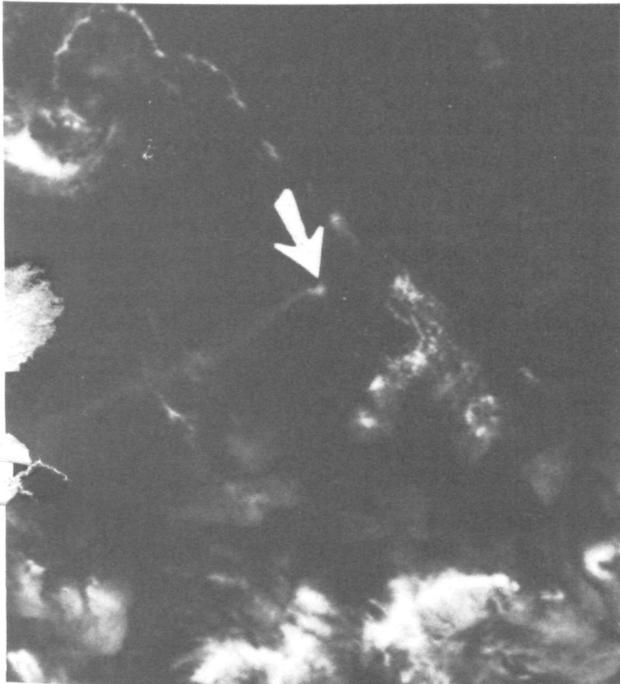


noaa week

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January 4, 1974

Volcanic Eruption Spotted In NOAA-2 Image



See story on page 3.

Routes Oil Supertankers May Take From Alaska Are Being Surveyed

A five-year program has been launched for detailed surveys of the tides and currents in Washington State-British Columbia waters through which giant oil supertankers may travel enroute from the Alaskan pipeline terminal.

The surveys are needed to insure safe navigation for the tankers in the often hazardous and restricted waters leading to an oil refinery at Cherry Point, Wash., near the U.S.-Canadian border and future refineries in this vicinity. They will provide data for more reliable predictions of tides and tidal currents.

When the 800-mile pipeline from Alaska's North Slope to its nearly ice-free port of Valdez is completed, possibly in 1976, it will carry up to two million barrels of oil daily for delivery to tankers which will transport the fuel to west coast ports.

Modern supertankers are of such deep draft that they require accurate predictions of

(Continued on page 3)

Schanes and Macdonald Named to Tuna Commission

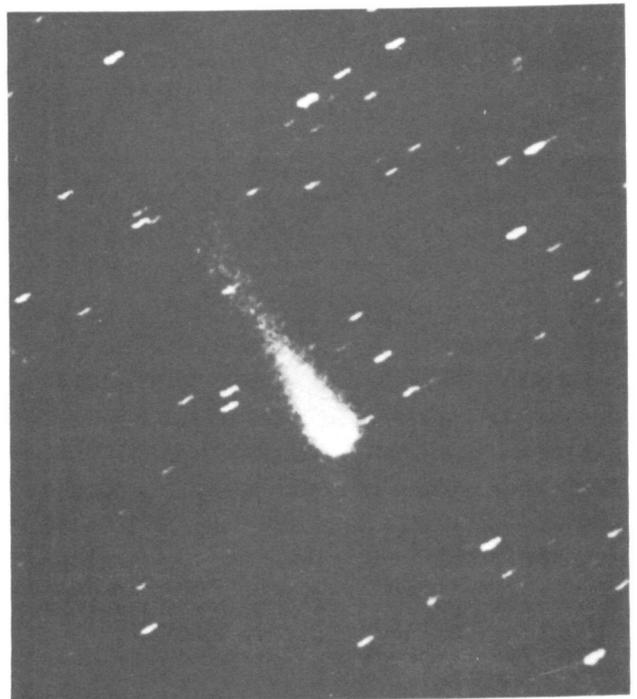
The President has appointed Dr. Steven E. Schanes and Robert C. Macdonald as United States Commissioners on the Inter-American Tropical Tuna Commission.

Dr. Schanes is Assistant to the Director for Special Projects, National Marine Fisheries Service, La Jolla, Calif. He succeeds William M. Terry, who died May 6, 1973.

Mr. Macdonald is senior partner of the law firm of Macdonald, Dean, McCallister and Snow, Astoria, Oreg. He succeeds William H. Holmstrom, who has resigned.

The Inter-American Tropical Tuna Commission carries on scientific investigation of tuna and tuna-bait fishes in the Eastern Pacific Ocean; collects and interprets factual information necessary to maintain the stocks of tuna and bait fishes at levels which will permit maximum sustained yields; and also recommends to governments conservation measures indicated by its scientific investigations.

The President is authorized to appoint four Commissioners, who serve without compensation. The other two Commissioners are John G. Driscoll, Jr., and Donald P. Loker.



This is the comet Kohoutek as photographed by the NOAA solar observatory at Carnarvon on the western coast of Australia, at 2 p.m. CST, December 5, 1973.

Dr. Abram Bernstein Becomes Staff Member of NACOA

Dr. Abram Bernstein, formerly of the Environmental Research Laboratories, has joined the staff of the National Advisory Committee on Oceans and Atmosphere (NACOA).

Dr. Bernstein has an undergraduate degree in meteorology cum laude from the City College of New York, where he was a Phi Beta Kappa; a master's degree in meteorology from Pennsylvania State University; and a doctorate in atmospheric sciences from the University of Washington. During his professional career as a Research Meteorologist with ERL, he engaged in theoretical and observational studies of turbulence in the earth's surface and planetary boundary layers, including air-sea interaction.

Max R. Griffith To Head Montgomery, Ala., WSO

Max R. Griffith has been selected to head the National Weather Service Office at Montgomery, Ala. He replaces John Moseley, who has transferred to Baton Rouge, La.

Mr. Griffith has more than 27 years of meteorological experience. Following nine years of weather work in the U.S. Air Force, he joined the Weather Service at Topeka, Kans., in 1955. Later he was assigned to Wichita. In 1971, he took charge of the Weather Service's new network radar weather station at Neenah, Wis.



ERL Awards Atmospheric Research Grant to Clarkson College

A \$25,000 grant for research on fog, rain, hail, and atmospheric aerosols has been given to Dr. Milton Kerker of New York's Clarkson College of Technology in Potsdam by the Environmental Research Laboratories.

Dr. Kerker, a professor of chemistry, is using remote sensing techniques such as Doppler radar and lidar--the laser equivalent of radar--to determine the size, shape, composition, and numbers by monitoring the motions of the various types of wind-carried hydrometeors and atmospheric aerosols. While it is known that the composition of aerosols is limited to a small number of compounds such as salt, and clay, and meteoritic, volcanic and organic materials, he hopes the research will extend the list of known information.

In addition, Dr. Kerker will attempt to determine whether or not there are definitive remote sensing tests which will discriminate between rain and hail; large hailstones and small hailstones; snow and aerosols, sea salt aerosol and volcanic ash aerosol; sleet and snow; or cloud and rain.

His proposed technique involves searching for the calculated scattered output by a particular two-component mathematical model for definitive indicators of one kind of particulate in relation to its competitor. The research project will be monitored by Dr. Vernon Derr, who leads the atmospheric spectroscopy program at NOAA's Wave Propagation Laboratory in Boulder, Colo.

Management Seminar Oriented to Ships' Command Is Conducted at Pacific Marine Center



Members of the Pacific Marine Center recently participated in a five-day management seminar developed and conducted by the Northwest Administrative Service Office Personnel Division in Seattle, Wash. The program, the first of its kind, was initiated by PMC Director Rear Admiral H. R. Lippold, Jr., and was specifically oriented to ships' command including Chief Yeomen from National Ocean Survey vessels stationed at PMC. Participants in the seminar were (front row, from left) Chief Yeoman George Avery; Chief Yeoman C. Fairchild; Chief Yeoman John Herrick; Commander K. W. Jeffers; (middle row, from left) Yeoman Warren Davis; Chief Yeoman W. F. Hogle; Admiral Lippold; Commander Freddie Jeffries; Commander Frank Rossi; Commander Mike Fleming; Commander Walt Bradley; Henry Shek; (back row, from left) Chief Yeoman Gordon Lochrie; Lieutenant Commander John Albright; Commander George Poor; Commander Charles Burroughs; Lieutenant Commander John VanderMullen; Commander L.L. Reinke; Commander Walt Forster; and Commander Charles Townsend.

Volcanic Eruption Spotted in NOAA-2 Image at NESS

Scientists at the National Environmental Satellite Service noted a smoke plume, estimated to be 75 miles long, originating at Isla Fernandina (arrow) in the Galapagos in a NOAA-2 satellite image on December 10. The smoke plume was the first evidence of a volcanic eruption on the island.

NESS notified the Smithsonian Institution, which dispatched a crew of scientists to the island. They verified the eruption, and are continuing to study it.

The area also was photographed by the National Aeronautics and Space Administration's Skylab crew on December 11.

Picture resolution in the image acquired by NOAA-2's very high resolution radiometer, is one-half-mile.

Tampa International Airport Being Surveyed

An airport survey party, headed by Lieutenant (junior grade) Brent G. Harris, is conducting a field survey of Tampa, (Fla.) International Airport as part of a joint program with the Federal Aviation Administration (FAA) to advance air safety.

Routes Oil Supertankers May Take From Alaska Are Being Surveyed

 (Continued from page 1)

ages of the tide, as well as depth soundings, in order to navigate many waterways.

The surveys are being conducted by the United States, in cooperation with the Canadian Government. Two American ships will be involved in the project, the NOAA Ship *McArthur*, and the *Onar*, an oceanographic research vessel of the University of Washington. Current-measuring meters will be planted in the waterways by the National Ocean Survey, the University of Washington and the Canadians. Gages will be installed along the shores to record the rise and fall of the tide.

The marine data will be processed by the NOS' oceanographic facilities in Rockville, Md., the Environmental Research Laboratories' Pacific Marine Environmental Laboratories, in Seattle, Wash., the University of Washington, in Seattle, Wash., and the Canadians in Victoria, British Columbia.

Preliminary surveys for the project were carried out last fall by the *McArthur* and the actual survey will begin in mid-February. The *McArthur* will maintain a five-month annual schedule of surveys, working each year from mid-February to the end of April and from early September to mid-November. During the summer months, it will conduct tide and current surveys in Cook Inlet, Alaska. The current surveys in Cook Inlet, Alaska. The ship is commanded by Commander Austin Yeager of Pelham, Ala., and carries a complement of 36 officers and crew. The 175-foot, 995-ton Seattle-based vessel will be assisted in its tide gage work by the National Ocean Survey's Pacific Tide Party.

In addition to the work now being programmed for the NOAA Ship *Davidson* last year surveyed for submerged navigational hazards a deep draft

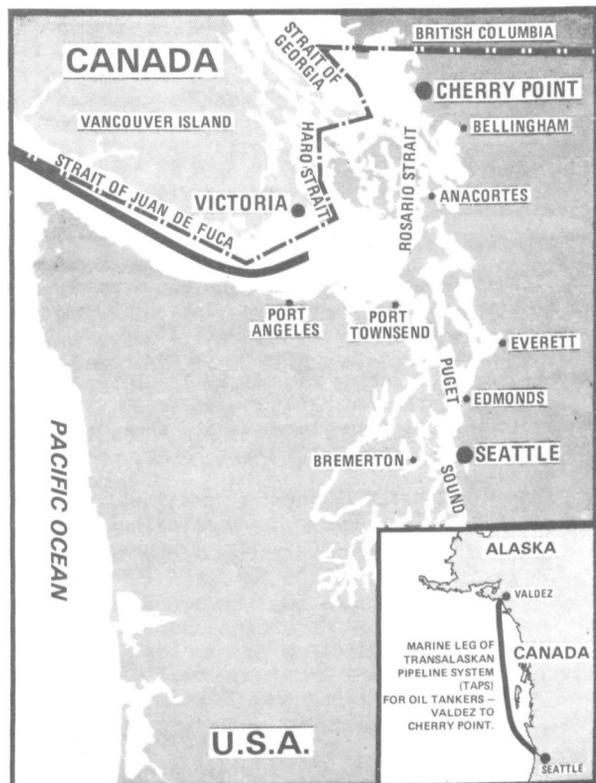
Proceedings of NOAA-Sponsored Ocean Conference Now Available

Proceedings of the Conference on the Oceans and National Economic Development have been printed for the use of the Committee on Commerce of the United States Senate, and are now available to the public. Prepared at the request of the Hon. Warren G. Magnuson, Chairman of the Committee, the publication includes all of the speeches, and transcripts of the panel discussions presented at the conference held in Seattle, Wash., July 17-19, 1973.

The conference was sponsored by NOAA, and addressed six aspects of the Nation's ocean program: energy and mineral resources, living resources, recreational resources, coastal zone management, regional organizations, and marine transportation. The more than 650 attendees included leaders in government, industry, and the academic and environmental communities who met to assess present activities and lay the groundwork for the future of the U.S. ocean program.

Entitled "The Oceans and National Economic Development," the proceedings are for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, at a cost of \$2.05. A copy is being provided to each attendee.

channel which may be used by the tankers. The channel extends from the Strait of Juan de Fuca through Rosario Strait. The area was examined to a depth of 90 feet.



recipe of the week



ROUNDER FLOUNDER WITH LEMON SAUCE

2 pounds flounder fillets, fresh or frozen
1 teaspoon salt
3/4 cup thinly sliced celery
1/3 cup chopped onion
1/3 cup margarine or cooking oil
3 cups herb-seasoned stuffing mix
3/4 cup hot water *
12 slices bacon, partially cooked
Lemon Sauce

Thaw frozen fillets. Divide into 12 equal portions. Sprinkle fillets evenly with salt. Cook celery and onion in margarine or cooking oil until onion is tender, not brown. Add stuffing mix and water; toss lightly until all the liquid is absorbed. Spread an equal amount of stuffing on each portion of fish. Roll up. Wrap each flounder roll in a bacon slice; secure with wooden pick. Arrange on well-greased shallow baking pan, 10 by 15 inches. Bake in moderate oven, 350° F., 25 to 30 minutes or until fish flakes easily when tested with a fork. Serve with Lemon Sauce. Makes 6 servings.

* Some stuffings will require additional hot water to hold together. Add additional hot water, if necessary, very gradually until stuffing is moist and holds together.

Lemon Sauce

1 cup salad dressing
1/4 cup lemon juice
1/2 teaspoon paprika

Combine ingredients; stir. Heat slowly to serving temperature, stirring often. Makes about 1-1/4 cups sauce.

University of Chicago Awarded Severe Storms Research Grant

A \$20,196 grant for research on Doppler radar observation of severe convective storms has been given to Drs. R. C. Srivastava and Jaroslav Sychra of the University of Chicago Department of Geophysical Sciences by the Environmental Research Laboratories.

Doppler radar has been increasingly used to observe distributions of rain, ice crystals, hail, and water vapor in clouds, and winds in various meteorological situations. Using computer simulation of model situations and radar measurements, Drs. Srivastava and Sychra hope to develop optimum strategies for using single and multi-Doppler radar systems in observing severe convective storms, and in the subsequent processing and analysis of the radar data.

From examination of measurements by a single Doppler radar, they hope to develop simple criteria for recognizing regions of intense shear and circulations, as in tornadoes. They also hope to provide criteria for the optimum positioning and utilization of multi-Doppler radar systems and methods for the analysis and reduction of data obtained from such systems. The research also will provide estimates of various sources of error contributing to degraded performance of such systems.

Dr. Richard J. Doviak, a Supervisory Electrical Engineer at NOAA's National Severe Storms Laboratory in Norman, Okla., will monitor the research project.

Garcia Heads NOS Radio Facility Chart Branch

Frank V. Garcia has been appointed Chief of the Radio Facility Chart Branch in the National Ocean Survey's Aeronautical Chart Division. In his new capacity, Mr. Garcia will supervise the production and maintenance of instrument navigation charts for low and high altitude flying and radar video, controller and other miscellaneous use charts required for air traffic control.

Mr. Garcia, a native of El Paso, Texas, has been with the NOS and its predecessor, the Coast and Geodetic Survey, for over 31 years.

Georgia, Carolina Estuaries Being Surveyed

The National Ocean Survey's Atlantic Hydrographic Party is making a hydrographic survey of estuaries along the Georgia and Carolina coasts. The party, under the supervision of Lieutenant Commander Fidel Smith is surveying in the entrances of the Cape Fear River, N.C., Port Royal Sound, S.C., and the Savannah River, Ga. These waterways lead to such communities as Wilmington, N.C., Port Royal, S.C., and Savannah, Ga., respectively. The up-to-date navigational information on the depth of channels and shallow areas and the location of submerged obstructions will be reflected in nautical charts issued by the NOS.

NOS Radar Video Development Team Receives Unit Citation

A NOAA Unit Citation has been awarded to the National Ocean Survey's Radar Video Development Team for "outstanding individual and collective contributions to the Federal Aviation Administration Radar Video Program."

Members of the Team are David T. Theodore, Clyde E. Duncan, and James A. Murphy, from the Office of Marine Technology's Engineering Development Laboratory; and, from the Office of Aeronautical Charting and Cartography, Philip C. Domras, Roger G. Bunting, David F.

Fry, Albert O. Schmitz (retired), David A. Christenson, Willard Ward (now with FAA), Raymond Lang (retired), Bertram Rothenberg, Lee R. Krusienski, Walter Henegar, Donald Rahn, and Richard Muller.

Rear Admiral Allen L. Powell, NOS Director, who presented the Citation, said their development of radar video map display data was "a critical component of the current multi-million dollar effort to upgrade air traffic control within the National Airspace Program."



(Standing, from left) Mr. Murphy; Mr. Rothenberg; Mr. Duncan; Mr. Lang; Mr. Schmitz; Mr. Muller; Mr. Ward; Mr. Theodore; Frederick O. Diercks, Associate Director, Aeronautical Charting and Cartography; Mr. Henegar; Mr. Rahn; Mr. Domras; Mr. Christenson; William M. Nicholson, Associate Director, Marine Technology; Mr. Krusienski; Mr. Fry; and Mr. Bunting. (Seated) Admiral Powell.

New Products Utilizing Minced Fish as a Major Ingredient To Become Available Soon

New types of food products utilizing fish flesh as a major ingredient will soon become increasingly available to consumers at similar or possibly lower prices than comparable food items now available, according to National Marine Fisheries Service experts.

Earlier this year, the NMFS announced that it had demonstrated machinery to strip the meat from either dressed fish or fish "frames" (the remaining skeletons) and recover it. This recovered edible flesh from traditional species such as cod, had-dock, or flounder, was previously discarded in many cases, but can be formulated into new, wholesome, marketable product forms attractive to homemakers. The recovered fish flesh in its raw form is called "minced fish" and offers a potential for diversification of the fishing industry into the rapidly expanding convenience and snack food fields.

NMFS personnel recently demonstrated several concepts for diversified uses of the minced fish. As a starting point, a basic pasteurized spread was prepared from minced fish, similar in texture and color to cream cheese, but possessing essentially no flavor or odor of its own.

Many variations can be made in the spread. For example, by adding suitable flavors and colors prior to pasteurization, the product can be made to resemble smoked salmon, chive, scallops, clam, or pepperoni spread. For added variety it can be manufactured in contrasting colors, parallel or concentric

layers, wedges, or even swirls. The basic spread may be used pasteurized, unpasteurized, or commercially sterilized. The pasteurized and flavored spreads can have the texture of butter or jam and be served in this form. In the frozen form they may be cut into serving portions, wrapped in dough and heated from the frozen or thawed state to produce an attractive, pleasantly flavored, high-protein food portion.

By adding vegetable oil, buttermilk, or water to the pasteurized spread, and homogenizing the product, it can be made into creamy high or low calorie mayonnaise-like dip or salad dressing, suitable for the retail or institutional trade. The product may also be frozen unpasteurized in block form and later cut into small cubes, sticks, or portions, then battered, breaded, and deep-fried. This form of the product has a texture with a crisp exterior and a soft inner core.

By adjusting the formulation and taking advantage of the high binding power of the fish protein, one can blend such natural products as oysters, clams, scallops, geoducks, mussels, and sea cucumbers into tender textured products with excellent flavor appeal. The NMFS technologists say the minced fish used as the main ingredient or as a partial ingredient can play an important role in the expanding high-profit convenience and snack-food market. Several major food companies in the United States and Canada have recognized this potential and have begun product development.

length of service awards

National Weather Service Central Region employees who received Length of Service Awards in August were: 30 years - Joseph F. AUDSLEY, NSSFC Kansas City, Mo.; Floyd E. KOLANDER, WSO Green Bay, Wisc.; Roy L. KRAMER, WSO St. Cloud, Minn.; George W. PORTER, WSFO Denver, Colo.; Paul A. REED, WSO Colorado Springs, Colo.; Way G. STEVENS, WSFO Denver, Colo.; and John D. ALYEA, WSO Cheyenne, Wyo. 20 years - Alfred G. BOLLIG, WSO Goodland, Kans.; Herbert C. DAHL, WSFO Detroit, Mich.; Richard L. FLINT, WSO Houghton Lake, Mich.; and Keith A. GREGORY, WSFO St. Louis, Mo.

National Marine Fisheries Service Northwest Fisheries Center employees who received Length of Service Awards in August were: 25 years - Robert H. LANDER and Kenneth L. LISCOM.

NOAA Headquarters employees who received Length of Service Awards in August were: 35 years - Otto SVENDSEN and Floyd MARTIN. 30 years - Bernard ZAVOS, Rear Admiral Harley D. NYGREN, Randel YOUNGBLOOD, James ASKEW, Joshua HOLLAND, Ellease TIMMONS, Jay WINSTON, James KEISTER, Anthony VEITH, and Clifford FRY. 25 years - Myron LAWRENCE, Patricia PARKER, William LANGLEY, David THEODORE, Robert OCHINERO, Thomas CARVER, Charles FOPAY, Carolyn SPENCER, and Vincent MURINO. 20 years - Percy JOHNSON, Ansel PAGE, William SHOOK, Americo REALE, Dale WESTBROOK, Neil BENFER, Cora SLADE, Mitchell HANSFORD, Betty HACKLEY, George TOWNSEND, Lawrence MURPHY, and George BABCOCK.

National Weather Service Southern Region employees who received Length of Service Awards in August were: 35 years - Wilbur F. PEARSON, WSO Orlando, Fla.; and Robert F. HASLING, WSFO New Orleans, La. 30 years - Samuel C. DAVIS, WSO Macon, Ga.; Joseph W. POPE, WSO Pensacola, Fla.; Robert O. COLE, WSFO Jackson, Miss.; James A. HORTON, WSO Shreveport, La.; Edward T. WALKER, Jr., WSO Nashville, Tenn.; Rollo T. DAVIS, WSFO Oklahoma City, Okla.; and Gail W. LEBER, WSO Lakeland, Fla. 25 years - Fred C. RENNKE, WSO Amarillo, Tex., and Dorothy W. MIXON, NHC, Miami, Fla. 20 years - Allen D. CUMMINGS, WSRH Fort Worth, Tex.; Dow E. BOYKIN, WSO Tampa, Fla.; Richard W. LYLE, WSFO Fort Worth, Tex.; Ralph C. PIKE, WSFO Albuquerque, N. Mex.; and William R. HARE, WSMO Hondo, Tex.

National Marine Fisheries Service Northwest Region employees who received Length of Service Awards in August were: 25 years - Kathleen A. RAFTERY and Benjamin MERCULIEF. 20 years - John MELOVIDOV and Sidney I. GARNESS.

National Weather Service Eastern Region employees who received Length of Service Awards in August were: 35 years - Paul J. BOWERS, WSO Charlotte, N. C.; and John J. HALLORAN, WSO Caribou, Maine. 30 years - James N. HOSEY, WSFO Raleigh, N.C.; Leonard S. KMIECIAK, WSO Baltimore, Md.; David H. ABRAMS, ERH Garden City, N.Y.; John P. KERRIGAN, WSMO Chatham, Mass.; and Robert E. PIKE, WSO Boston, Mass. 25 years - Vincent J. NUNZIATA, WSO New York, N.Y.; and Jerrold A. LaRUE, WSFO Washington, D.C.

Dave H. WIEG of the National Marine Fisheries Service Pacific Fishery Products Technology Center, received a 25-year pin in August.



Lorry NAKATSU (left) received his 25-year Length of Service Award at a National Marine Fisheries Service staff meeting in August from Joseph W. Slavik, NMFS Associate Director for Resource Utilization.

National Weather Service Southern Region employees who received Length of Service Awards in September were: 40 years - Henry A. MOONEY, WSO Midland, Tex. 35 years - George C. MARTIN, WSFO Little Rock, Ark. 30 years - Lester L. BENSON, WSO Ft. Myers, Fla.; Richard S. SCHRAG, WSFO San Antonio, Tex.; Jack A. PHILLIPS, WSO Chattanooga, Tenn.; James H. HARMAN, Jr., WSO Ft. Smith, Ark.; Addie E. HOLCOMB, WSO Tulsa, Okla.; Henry S. WILLIAMS, NHC, Miami, Fla.; Lewis C. NORTON, WSFO Lubbock, Tex.; Lowell H. SAPP, WSMO Waycross, Ga.; and Robert E. RUDEUCK, WSMO Ft. Worth, Tex. 25 years - Paul H. HAGERTY, WSRH Ft. Worth, Tex.; Fred O. ROBINSON, WSO Port Arthur, Tex.; and Eula A. DEPUY, WSFO Oklahoma City, Okla. 20 years - Ben P. BARKER, Jr., WSO Montgomery, Ala.; Hugh PEACE, Jr., WSFO Jackson, Ala.; Ralph E. MARSHALL, WSO Midland, Tex.; William D. CRAWFORD, WSO Abilene, Tex.; Rollin E. MANNIE, WSFO Little Rock, Ark.; and Kenneth B. SEAL, WSO Tulsa, Okla.

National Weather Service Eastern Region employees who received Length of Service Awards in September were: 30 years - James W. ALLEN, WSO New York, N.Y.; Ben E. TRAPANI, WSO Bridgeport, Conn.; William A. GRIBBLE, WSO Norfolk, Va.; Frances N. KENNY, WSO Pittsburgh, Pa.; Harold E. McDONNELL, WSO Boston, Mass.; and Frank J. THRASHER, Jr., AWP, Boston, Mass. 25 years - James P. DILLON, WSO New York, N.Y. (JFK). 20 years - Kenneth W. HAGY, WSFO Philadelphia, Pa.

NOAA Headquarters employees who received Length of Service Awards in September were: 35 years - George ALLEY, John BURRELLI. 30 years - Helen STAFFORD, Benjamin RICHMOND, and Michael SUNRAY, 25 years - Roland PAINE, Alden BESTUL, Alexander A. SZABO, Mary BRUNSON, and Hugh GREENAN. 20 years - Harry FEEHAN, Eleanor SHANNON, J. Donald FRENCH, Ronald BENNETT, Delores REESE, Rupert BONNER, and Robert WATSON.

length of service awards

National Weather Service Central Region employees who received Length of Service Awards in September were: 30 years - Martin M. BAUMANN, WSFO Bismarck, N. Dak.; Donald S. DORMAN, WSO Grand Junction, Colo.; Wayne E. NEWQUIST, WSFO Denver, Colo.; Edgar D. REVIS, WSFO Denver, Colo.; and Howard W. WARREN, WSO Sioux City, Iowa. 25 years - Mary F. RUTHERFORD, CRH Kansas City, Mo. 20 years - Ted V. LUNGWITZ, WSO Pueblo, Colo.; and Fred W. RUBIN, WSO Aberdeen, S. Dak.

National Marine Fisheries Service Northwest Region employees who received Length of Service Awards in September were: Nicolai S. MERCULIEF, 35 years; and William L. PECK, 30 years.

National Weather Service Western Region employees who received Length of Service Awards in September were: 35 years - Glenn M. LEE, WSO Pendleton, Oreg.; and Edward W. NELSON, WSO Missoula, Mont. 30 years - Walda S. KENNEDY, WSO Bishop, Calif.; John E. ROCKEY, WSFO Los Angeles, Calif.; and Russell H. WILLIAMS, WSO Bakersfield, Calif. 25 years - Glade H. GERBER, WRH Salt Lake City, Utah; Jack B. HARDMAN, WSO (R), Salt Lake City, Utah; and Earl F. ROBINSON, WSFO Great Falls, Mont. 20 years - Max H. BAUMGARTNER and Paul D. RANK, WSO Helena, Mont.; Norman S. BENES, WSO Sacramento, Calif.; and Robert W. PENTNEY, WSO Medford, Oreg.

National Marine Fisheries Service Northwest Fisheries Center employees who received Length of Service Awards in September were Willman M. MARQUETTE, 25 years; and Douglas D. WEBER, 20 years.

Employees of the National Ocean Survey's Pacific Marine Center who received Length of Service Awards in September were: 40 years - Albert M. GREENBERG. 25 years - Joe M. DACERA and Charles W. FORSTER. 20 years - Robert L. FRANKLIN.

Laurence E. EBER of the National Marine Fisheries Service Southwest Fisheries Center received a 20-year Length of Service Award in September.



Sol HELLERMAN (center) received his 30-year Length of Service Award at the Environmental Research Laboratories' Geophysical Fluid Dynamics Laboratory in Princeton, N.J., in September. He is being congratulated by Dr. Joseph Smagorinsky, Director of GFDL, and on the right is Dr. Kirk Bryan, Mr. Hellerman's Project Leader.

Richard T. MYREN of the National Marine Fisheries Service Alaska Region received a 20-year Length of Service Award in September.

National Weather Service Western Region employees who received Length of Service Awards in October were: 35 years - John D. QUINN, WSFO Salt Lake City, Utah; 30 years - William A. EWING, PWP San Francisco, Calif.; Ray KISTLER, WSFO Phoenix, Ariz.; Earl T. RIDDIOUGH, WSO Bakersfield, Calif. 20 years - William FOLSOM, WSO Sacramento, Calif.



Elizabeth B. LEONARD, of the National Marine Fisheries Service Southeast Fisheries Center Miami, Fla., Laboratory, was presented her 25-year Length of Service Award by Harvey R. Bullis, Jr., SEFC Director.

National Weather Service Eastern Region employees who received Length of Service Awards in October were: 30 years - William J. MCKEE, Jr., ERH Garden City, N.Y.; Grant W. VAUGHAN, WSO Akron, Ohio; Richard W. HOSLER, WSO Wilmington, N.C.; and Joseph M. BAUMAN, WSSF Wallops Island, Va. 25 years - Robert A. HENDERSHOT, WSO Cincinnati, Ohio. 20 years - William J. MESCALL, WSO Harrisburg, Pa.; Lawrence LEWIS, WSFO New York, N.Y.; Albert J. PLYTAGE, WSO Wilkes-Barre/Scranton, Pa.; David KING, WSMO Dayton, Ohio; Bernard W. THORSEN, WSO Worcester, Mass.

NOAA Headquarters employees who received Length of Service Awards in October were: 35 years - Jack ALLEN, Lawrence W. SCHEMERY, David H. STANCIL, John L. FORD, and Vaughn D. ROCKNEY. 30 years - Walter E. KURTZ, George W. REID, and Stanley J. KITZMILLER. 25 years - Frederic A. TOLSON, Arthur A. COUSIN, Gilbert JAFFE, E. Franklin JOHNSON, Michael PETRIK, Jack D. KELLY, and Josephine A. SNYDER. 20 years - George D. JONES.

Employees of the Environmental Data Service's National Climatic Center in Asheville, N.C., who received Length of Service Awards in October were: 30 years - Edith D. ALEXANDER and Eula W. WATSON. 20 years - Bob J. HYDE, James D. MATHEWS, Ethel C. LAMB, Lewis G. BRADLEY, and Margaret S. PONDER.

National Weather Service Central Region employees who received Length of Service Awards in October were: 30 years - Russell H. ALBERS, WSO Lander, Wyo.; Paul E. GRABLE, NRC Joliet, Ill.; Barbara J. MCKAIN, WSFO Cheyenne, Wyo.; John T. REED, CRH Kansas City, Mo.; and Ceel Van Den BRINK, WSO/AG East Lansing, Mich. 25 years - Francis V. ARNY, WSO Houghton Lake, Mich.; and Harry A. GORDON, NSSFC Kansas City, Mo. 20 years - Paul B. HOLCOMB, WSO Sioux City, Iowa; and Edward L. HONODEL, WSFO Denver, Colo.

Thirteenth Weather Class Held at NWS Technical Training Center



Participants in the Thirteenth Weather Radar Class held at the National Weather Service Technical Training Center in Kansas City, Mo., December 4-20, 1973, were (front row, from left) John Lambert, Stephenville, Tex.; Roland Mittelstaedt, Fort Wayne, Ind.; Peter Harris, New York, N.Y.; Donald Woods, Memphis, Tenn.; William Entemann, Lansing, Mich.; Fred Robinson, Gal-

veston, Tex.; Nels Drydahl, Aberdeen, S. Dak. (back row, from left) Bill Winkert, Instructor; James Prater, Salt Lake City, Utah; Charles Compher, Cape Hatteras, N.C.; Ray Diehl, Patuxent River, Md.; Don Williams, Instructor; Bill Blum, Jr., Lake Charles, La.; Leighton Schneider, Scottsbluff, Nebr.; Joel Wertman, Instructor; and Larry Burns, Instructor.

Anthony E. Rippo Receives Bronze Medal



Anthony E. Rippo, Marine Supervisor of the Long Beach, Calif., National Weather Service Marine Unit, has received a Commerce Bronze Medal for "individual leadership in the program to recruit cooperating merchant ships into the marine weather reporting service." The Medal was presented to Mr. Rippo (left) by Dr. Richard E. Hallgren, NWS Deputy Director.

GSA Offers Energy-Saving Suggestions

GSA reminds us that management officials and individual employees should be made fully aware of the need to conserve our energy resources. Some ways in which this may be accomplished are:

a. The assignment of management officials to oversee and supervise the conservation effort;

b. The appointment of monitors in specific areas to ensure that individual room thermostat settings are maintained within the prescribed range of 65° to 68° in GSA-operated office space during the heating season when this will result in fuel savings;

c. Publicizing stringent conservation practices through announcements at staff meetings, notices on bulletin boards, messages in newsletters, etc.;

d. Lowering illumination levels to 50 foot-candles for general office work and 25-30 foot-candles for non-work areas.

GSA is taking various steps to guide facility operators in energy-saving measures which will impact on NOAA. We must follow these suggestions as well as our own

Atmospheric Electric Fields Associated With Lightning Strokes and Tornadoes To Be Studied

Drs. David C. Chang and Samuel W. Maley of the University of Colorado's Department of Electrical Engineering have been given a \$14,020 grant for research on atmospheric electric fields associated with natural events such as lightning strokes and tornadoes by the Environmental Research Laboratories.

By making use of numerical models for electric charge and current distributions simulating the occurrence of a certain natural event, Drs. Maley and Chang hope to establish a valid propagation theory for the purpose of inverting electromagnetic responses to obtain

the physical properties of the event.

According to the two men, the remote-sensing technique based upon such a theory should be very useful in studying atmospheric electric fields in general. However, this research project will be restricted to phenomena related to cloud-to-ground discharges in lightning strokes.

Dr. James R. Wait, Director of ERL's Theoretical Studies Group in Boulder and a fellow of the NOAA-University Cooperative Institute for Research in the Environmental Sciences, will monitor the research project.

Items to be considered for publication in NOAA WEEK should be submitted to:
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