



noaa week

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Back to School

Message From the Administrator

September is traditionally known as "Back to School Month." Drive carefully must be our slogan at all times, but especially at this season when our children are returning to their schools, after a summer of freedom and fun.

All NOAA personnel should be extra watchful when driving in school areas in mid-afternoon when children seem to explode from their classrooms and dart heedlessly into traffic.

Mental and physical alertness in traffic situations at all times—by adults and children alike—will do much to improve our Nation's safety record and create a safer driving environment for all.

Dr. Robert M. White

Loran-C Nautical Charts For Coasts To Be Published

The National Ocean Survey plans to publish a series of Loran-C nautical charts for the coasts of the United States for use by shipping.

Loran-C is an improved electronic navigation system which has recently been designated by the Department of Transportation for general use. Publication of the Loran-C charts will take place over a period of time terminating in 1980 as the improved navigational system is expanded.

Loran—for long range navigation—is used by ships and aircraft to plot their positions. Loran-C is an improved version of Loran-A, now widely used by commercial fishermen, shipping companies, aviators and pleasure boaters, which was

developed during World War II.

Loran-C provides better accuracy and can be received at greater distances than Loran-A. Loran-C ground-wave signals travel 1200 to 1500 nautical miles as opposed to about 600 to 900 nautical miles for Loran-A. With Loran-C, a vessel's position can be plotted within one-quarter nautical mile (500 yards) compared to an accuracy of one-half to two miles for Loran-A.

Loran-C can operate under all weather conditions, whereas Loran-A signals are often disrupted by atmospheric disturbances. Present plans are to have Loran-C replace Loran-A during a five-year transition period, at which time Loran-A stations would be closed. There will be at least a two-year operational overlap with both systems on the air in any given area.

During the transition period, the NOS plans to publish Loran-C nautical

(Continued on page 4)

Task Force To Study Fisheries Management

A comprehensive study to assist State legislators in formulating effective legislation for managing fisheries will be conducted by the Council of State Governments under a contract signed recently with NOAA. High on the list of issues to be studied are the present and potential roles played by State governments in managing fisheries along the sea-coasts and in the Great Lakes.

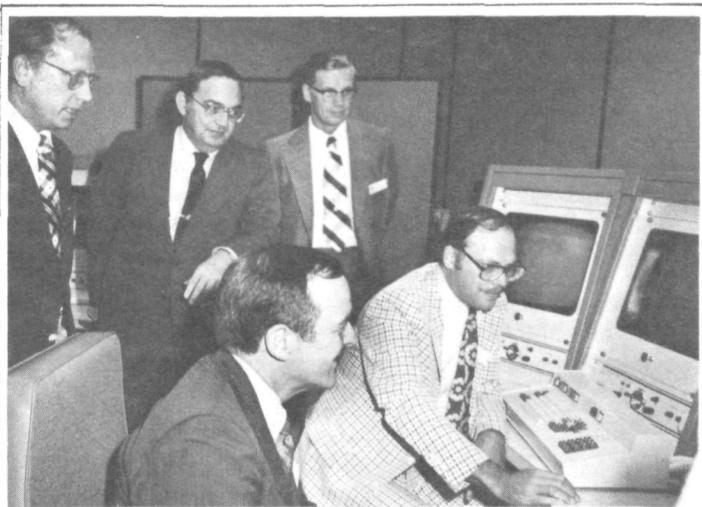
The Council's Committee on Suggested State Legislation produces an annual volume of suggested State laws on many subjects.

In addition to a "model" act on fisheries management, a specially assigned task

force under terms of the new contract will prepare a detailed report covering fisheries management at the State level. The recommendations and report will be presented to State representatives at a national conference of the Council in the spring of 1975.

The task force will be composed of State officials, including State legislators and administrative officers having major responsibilities in State fisheries management programs. An organizational meeting on the project held in late July in Denver, Colo., was attended by: Dr. Thomas E. Kruse, Director, Fish Commission of Oregon;

(Continued on page 4)



PRIOR TO A PRESS CONFERENCE on August 22, Secretary of Commerce Frederick B. Dent (seated, left) was given a demonstration of the equipment in the National Weather Service's experimental "Weather Office of the Future", forerunner to the AFOS (Automation of Field Operations and Services) program. James Giraytys, Acting Chief of the Systems Experimentation Branch of the Systems Design and Experimentation Division in the NWS Systems Development Office, conducted the demonstration. Other observers were (from left, standing) Dr. Richard E. Hallgren, NWS Deputy Director; Dr. Robert M. White, NOAA Administrator; and Dr. George P. Cressman, NWS Director.

SAVE THE DATE

NOAA's Annual Awards Luncheon will be held Friday, October 11, at 11:30 a.m. in Bolling Air Force Base Officer's Club. Further details will appear at an early date.

ERL-Designed Acoustic Echo Sounder Aiding GATE Scientists

Beep! . . . Beep! . . . Beep!

Every five seconds, three horn antennas mounted near the bow of the NOAA ship *Oceanographer* emit a high-pitched tone with a decibel level near the human threshold of pain.

The sound waves travel through the atmosphere until they strike a temperature change, which scatters and bounces them back toward earth.

Returning echoes received by the antennas provide valuable information on the temperature and wind structure of the atmosphere for the ongoing international weather study called GATE—the Global Atmospheric Research Program-Atlantic Tropical Experiment, sponsored by the World Meteorological Organization. Through the 100-day study, 40 vessels, 13 aircraft, and six kinds of satellites are collecting the data needed by scientists to solve the complex puzzle of tropical weather and its role in the behavior of the whole atmosphere.

The atmospheric acoustic

echo sounder, designed at the Environmental Research Laboratories' Wave Propagation Laboratory in Boulder, Colo., is providing a record of winds and temperature structure to a height of 400 meters (1300 feet) that will form a key piece in the gigantic puzzle.

Developed and built under the leadership of Dr. Freeman Hall, chief of ERL's Atmospheric Acoustics Program, the acoustic sounder is the only instrument of its kind gathering data aboard ship during the massive project.

On the *Oceanographer* at its station in the Atlantic 600 miles from the project's base at Dakar, Senegal, three large box-like transmitter/receivers are mounted—one aimed straight up into the atmosphere, and two angled outward from the ship's bow. Each contains a 100-watt industrial speaker, similar to those used in sports stadium public-address systems.

At five-second intervals, the transmitters send a 200-millisecond (one-fifth of

a second) blast of sound into the atmosphere. Then, after a pause of 50 milliseconds to allow the transmitter to stop oscillating, the receivers begin listening for returning sounder echoes.

Temperature changes at any level within the 400-meter range scatter the sound bursts and return them to the receivers. In warm, rising air, the returning signals are strong; in cooler air, they are weaker.

"The human ear is an excellent acoustical instrument," Dr. Hall says, "but our equipment can hear 10,000 times better." So sensitive are the receivers that raindrops strike them with a loud bang. Therefore, the Wave Propagation Laboratory team makes a practice of turning off the antennas and covering them when rain has fallen for an hour and seems likely to persist. Otherwise, they operate continuously during experimental periods.

On the ship, the returning echoes are converted to electrical signals and recorded automatically on a 14-channel tape recorder, as well as by facsimile equipment, giving a picture of the temperature structure of the atmosphere. Wind profiles—vertical tracings of wind speed and direction at various levels—are calculated later, by analyzing the Doppler shift of the returning echoes. In this way, wind speed and direction can be computed for thirteen 30-meter-thick levels in the lowest layer of the air.

Because the sound bursts are scattered only by temperature fluctuations, wind profiles cannot be obtained when the atmosphere is thermally homogenous—with no temperature variations—within range of the remote-sensing instrument.

The acoustic soundings also contribute to the GATE investigation of the transfer of energy from sea to air. Warm air rising from the sea in tropical convective systems returns a strong signal to the shipboard receivers.

When such a system arrayed over the antenna array shape and structure are recorded by the sounder.

Similar acoustic sounder equipment developed by the Wave Propagation Laboratory has been tested at Denver's Stapleton International Airport as a means of sensing winds for aviation. Mounted on land, the instruments detect temperature fluctuations as high as a mile in the atmosphere.

For use during GATE's first United States test, this new technique—this marine environment-sounding array is mounted on a gyro-stabilized platform to eliminate the effect of the ship's roll and pitch and keep the vertical antenna pointing straight up. An accelerometer measures the platform's vertical motion so that soundings can be corrected for the ship's up and down motion.

In addition to Dr. Hall, members of the team operating the acoustic sounder during GATE are project leader Dr. Peter Mantua, electrical engineer Edward Owens, and electronic technician Clarence Case.

NWS Wage Board Men on Islas del Cisne Receive Special Achievement Awards

A Special Achievement Award has been presented to the Wage Board employees who live on Islas del Cisne (Swan Island), Honduras, and work at the National Weather Service Office there. In addition to performing their ordinary duties, the men were called on to dig a large hole for and install a

15,000-gallon fiberglass fuel tank; move and install two 9,000-pound electric engine generators; unload, in two-and-a-half days under very difficult conditions, 230 tons of supplies; and assist in preparation of the island for the visit of high government officials.



(From left) Vincent Chin; Walter Glassman, Incoming Official in Charge; Charles Clark, Official in Charge; Spencer Bennett, Wage Board Leader; Norman Smith; Randolph Moore; and Horis Kelly.

noaa week

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Catherine S. Cawley, Editor
Anna V. Felter, Art Director

Dr. R. M. White Is Reelected to MTS Council

Dr. Robert M. White, NOAA Administrator, has been reelected to a full term as a member of the Marine Technology Society Council, the Society's governing body. Dr. White, who had previously been appointed to a vacancy on the board, serves as Vice President at large.

Other NOAA personnel presently prominent in the operation of the organization are:

—Dr. Robert B. Abel, Director of NOAA's Office of Sea Grant—President-Elect of the organization for the past year, he became President on July 1, and is 10th Annual MTS Conference, scheduled to be held September 23-25 in Washington, D.C.;

—Steven N. Anastasion, Chief of Plans and Program Coordination in the office of NOAA's Associate Administrator for Marine Resources, who is the Program Chairman for the forthcoming Conference;

—Richard M. Morse, Associate Director for Marine Sciences in the Environmental Data Service, who is Secretary for Local Sections for the MTS;

—Dr. Harris B. Stewart, Jr., Director of the Environmental Research Laboratories' Atlantic Oceanographic and Meteorological Laboratories in Miami, Fla., who is the MTS Vice President in charge of Exploration and Ocean Operation;

—Dr. Robert F. Dill, Science Coordinator of the Manned Undersea Science and Technology Program in the Office of Marine Resources, who is Chairman of the MTS Committee on Geology and Geophysics;

—Dr. Milton G. Johnson, Chief of the Special Studies Group in the office of the Director of the NOAA Corps, who is Chairman of the MTS Committee on the

Charles Kearsse Receives The Colbert Award

Charles Kearsse, Chief of the Ocean Engineering Laboratory in Miami, Fla., and Chief Engineer for the Marine Ecosystems Analysis (MESA) Project, has been awarded the Colbert Award. The award is presented annually to the National Ocean Survey employee judged to have contributed

most to the field of ocean engineering.

Mr. Kearsse was responsible for the design and shipboard integration of the current measuring systems used in the Cook Inlet (Alaska) Circulatory Survey and the data acquisition systems used in support of the New York Bight (MESA) program.



Mr. Kearsse received the award from Rear Admiral Allen L. Powell, Director of the National Ocean Survey, at the annual banquet of the American Society of Military Engineers in Houston, Tex.

NOAA Corps Class Told of Career Potential in NWS

There is a place in the National Weather Service for NOAA officers, to the benefit of the NWS, and with career potential for the officer, Lieutenant Commander Theodore Wyzewski recently told the 48th NOAA Corps Training Class at the U.S. Merchant Marine Academy in Kings Point, N.Y.

As an example, Lt. Commander Wyzewski cited his own career pattern, which has included sea duty; service as a forecaster; post graduate work; and headquarters staff assignments. He is cur-

rently assigned to the Marine Weather Services Branch of the Ocean Services Division in the NWS Office of Meteorology and Oceanography.

He also discussed the organization of the NWS and the varied types of work which indicate numerous



Ocean Economic Potential. The new President-Elect of the MTS is Dr. John C. Calhoun, Jr., former head of the Sea Grant Program at Texas A&M University and now Vice President for Academic Affairs at TAMU. He will take office as President next July 1.

other career patterns for officers with differing backgrounds and which would help prepare the officers for senior billets within NOAA.

Waldman To Be MIC at WSFO In Chicago



Raymond R. Waldman has been selected as Meteorologist in Charge of the Weather Service Forecast Office in Chicago, which serves the State of Illinois, as well as the largest city in the Central Region. Special added programs include Aviation Area Forecasting for an eight-state area and the marine weather forecasting program for Lake Michigan and Lake Superior.

Mr. Waldman, who is currently MIC of the Weather Service Forecast Office in Milwaukee, Wis., will report in Chicago on September 3. Prior to 1972 he served for a number of years as a forecaster at Cleveland. A native of Milwaukee, he began his meteorological career with the Army Air Corps during World War II. Post-war assignments were in the Philippines and in Puerto Rico.

In 1972 Mr. Waldman received a Department of Commerce Bronze Medal Award.

NOAA/NBS Energy Tip

Trees can be placed to shield large areas of a house, keeping some solar radiation off roof and walls.

Outside awnings, overhangs, and sun screens—together with trees—are the most effective means of blocking the sun, cutting solar heat gain by as much as 80 percent.

Mexican Sportboat Captains Receive 4th Annual Gardiner Awards

The fourth annual Gardiner Foundation Tagging Awards were presented recently at Rancho Buena Vista, Baha California, Mexico, by Izadore Barrett, Deputy Director of the National Marine Fisheries Service Southwest Fisheries Center in La Jolla, Calif., and James Squire, the fishery biologist there who manages the Pacific coast program and maintains the official records for the tagged fish. Recipients were the Mexican sportfishing boat captains who tagged and released the greatest number of billfish (striped marlin, blue marlin and sailfish) during the past 12 months.

The awards-cash and engraved plaques-established by the late Tom Gardiner, a prominent San Francisco sportfisherman, were instituted to encourage Mexican fishing boat skippers and fishing resorts to participate in the cooperative Marine Game Fish Tagging program off the tip of Baja California, where each year many of the world's sportfishermen try their luck at



(From left) Mr. Barrett; Gilberto Castro Collins, third place winner; Jesus Araiza Ruiz, second place; Filomeno Lucero L., first place; and Mr. Squire.

catching billfish. In addition to NMFS, the program is also sponsored by the Woods Hole Oceanographic Institution, the International Gamefish Association and the Mexican Department of Fisheries.

Much of the information on the migration and habits of marlin and sailfish has been obtained from the fish tags applied by sportfishermen. Primarily through the

efforts of U.S. anglers, over 300 striped marlin were tagged and released about the tip of Baja California, Mexico, during the year which ended in June 1974.

The longest migration recorded thus far has been that of a striped marlin, tagged off Cape San Lucas, which traveled to an area west of Hawaii in three months, a distance of 3,120 nautical miles.

Task Force To Study Fisheries Management

(Continued from page 1)

Frank Grice, Director, Division of Marine Resources, Massachusetts; Ed J. Huizer, Deputy Commissioner, Alaska Department of Fish and Game; State Senator Sanford Steckler of Mississippi; and State Representative Thomas Anderson of Michigan. Dr. Robert Hutton, National Marine Fisheries Service Associate Director for Resource Management; Richard Schaefer, Chief of the NMFS Office of State-Federal Relationships; and Stephen Powell of NOAA's Office of General Counsel represented NOAA and NMFS, while James Ridenour and Robert Mathews represented the Council of State Governments, which is headquartered in Lexington, Ky.

A meeting of the full task force is scheduled for September on the west coast. The group then will meet

periodically throughout the study period of one year as needed. Staff work will be performed by the State Services Office of the Council of State Governments, with assistance provided by NMFS.

To obtain independent perspectives on the framework of legislation that may be proposed, task force members will contact appropriate fisheries agency directors, industry leaders, recreational fishermen, and others knowledgeable on the needs of U.S. fisheries.

The Council of State Governments is a research and service organization, jointly supported by all States, which supplies extensive information intended to benefit the States within the Federal system, assists in State-Federal liaison, and provides staff services for affiliated organizations.

Obituary

Dr. Sidney Shapiro

Dr. Sidney Shapiro, former Special Assistant for Resource Development in the National Marine Fisheries Service, died on August 22 in Sandy Spring, Md. He retired in 1971.

Dr. Shapiro, who edited the NMFS book, "Our Changing Fisheries", published in 1971, had been with NMFS and its predecessor agencies since 1948, when he was employed by the Fish and Wildlife Service in Hawaii. In 1957, a special research unit he headed received a Unit Citation for meritorious service, and at one time he served as Chief of the Branch of Foreign Fisheries.

He is survived by his wife, Harriet, of 14600 Edelman Drive, Silver Spring, Md. 20906, and a sister, Mrs. Evelyn Glaser, of 35 Winthrop St., Brooklyn, N.Y. 11225.

NOS To Publish Loran-C Charts

(Continued from page 1) chart coverage on the of existing Loran-A charts. Thus, both Loran-A and Loran-C will be available to the mariner until Loran-A is discontinued.

Four Loran-C charts already been issued by the National Ocean Survey in the following areas: Chart 16006 (C&GS 9302), Bermuda Sea-eastern part; Chart 11520 (C&GS 1110), Cape Hatteras, N.C., to Charleston, S.C.; Chart 12300 (C&GS 1108), Approaches to New York-Nantuxet, Mass., to Cape May, N.J., and Chart 12200 (C&GS 1109), Cape May, N.J., to Cape Hatteras. It is anticipated that six more Loran-C charts will be issued this year for the east coast followed in 1975 by Loran-C charts for some Alaska waters.

Plans are to issue charts in 1974-75 for the following areas: Aleutian Islands; Amukta Island to Attu Sound; Block Island Sound, Mass., and approaches; Cape Canaveral to Key West, Fla.; Charleston, S.C., to Cape Canaveral, Fla.; Chesapeake Bay; Gulf of Maine and Georges Bank; Long Island Sound; Unalaska Island to Amukta Island, Alaska; Unimak and Akutan Passes and approaches.

Announcements will be made as each Loran-C chart is published. The charts may be purchased for \$1.75 from the National Ocean Survey Distribution Division (C-44), Riverdale, Md., and from National Ocean Survey sales agents throughout the country. Sales agent lists can be obtained from the Distribution Division free.

Loran-C has been used by the military since 1958, but its high cost has limited its civilian usage to some scientific and oil exploration groups. Recent advances in micro-electronics have made it possible to produce and sell Loran-C receivers at a price within the range of commercial users.

Weather-by-Phone System Is Dedicated at St. Jacob, Illinois

The dedication of Weather-by-Phone service in the smallest town in Illinois to have it installed to date, must rank among the more unusual of such ceremonies. More than 10,000 people had gathered in the Illinois

community of St. Jacob, whose population is 650, to attend the town's Homecoming celebration, of which the WE-6-1212 dedication was to be a part. When Illinois Governor Daniel Walker made the first call on the Home Telephone Company's new

service, the entire town heard the forecast, because loud speakers had been installed on all the telephone poles in the town.

Sharing the speaker's rostrum (which was on the back of a flat-bed farm truck) with the Governor were St. Jacob Mayor Don Giger; Richard Schmidt, president of the Home Telephone Company; Bob Menz, president of the First National Bank, which is sponsoring the telephone service; Karl R. Johannessen, Acting Associate Director of the National Weather Service's Office of Meteorology and Oceanography; Harold A. Scott, of NWS Public Weather Service; Dr. Walter Walker, president of Audichron Company; and Representative Don Brummet of Vandalia, Ill.



(From left) State Representative Benjamin Harpstrite; Leonard Winter, vice president, First National Bank; Mr. Schmidt; Governor Walker; Mr. Johannessen; Representative Brummet; and Mr. Scott.

Bradly Named NOAA/Navy Liaison Officer



Commander Bradly

Commander Walter L. Bradly has been assigned to the Office of the Oceanographer of the Navy where, as Liaison Officer, he will help coordinate related activities of the Navy and NOAA. He succeeds Captain Steven L. Hollis.

Commander Bradly has been Executive Officer of the NOAA Ship *Rainier* and was formerly Processing Division Chief at the Pacific Marine Center in Seattle, Wash. A NOAA commissioned officer since 1966, he served on the NOAA Ships *Pathfinder* and *Oceanographer* and with geodetic field parties G-19, G-37 and G-25.

Prior to entering the NOAA Corps, Commander Bradly served on active duty with the U.S. Navy for 11 years.

available, along with brief descriptions of their habits, distributions, and seasons of abundance. A text accompanying each section discusses topography, climate, tides, history of fishing, conservation problems, and some biology of the more frequently caught fishes. Each section also contains a glossary of fisheries terms.

Sections I, II, and IV of the Anglers' Guide cost \$4.15 each and Section III costs \$4.30. They can be ordered from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

NOAA Publishes Angler's Guide to Atlantic Coast

A geographical study of marine recreational fishing along the Atlantic coast has just been published by NOAA.

The "Anglers' Guide to the United States Atlantic Coast" is issued in four sections and covers saltwater fishing from Maine to Virginia. It is authored by Bruce L. Freeman and Lionel A. Walford of the National Marine Fisheries Service laboratory at Sandy Hook, N.J.

The sections are the first half of an eight-section study now nearing completion, which will embody the entire coast from Maine to Florida. Section I covers the area from Passamaquoddy, Maine, to Cape Cod; Section II, Nantucket Shoals to Long Island Sound; Section III, Block Island to Cape May, N.J.; and Section IV, Delaware Bay to False Cape, Va.

The published sections include four to six subarea maps of the tidal shoreline, shaded in such a way as to indicate wetlands, as well as city, county, and Federal parks and wildlife areas. Principal roads and towns, marinas, ramps, docks, and other fishing facilities, fishing grounds, locations of wrecks, artificial reefs, and areas where the most popular fishes are commonly caught are shown. There are illustrations of the fishes

life habits, and environmental requirement of fishes along the Atlantic coast has just been published by NOAA.

her special projects activities, which included developing special seminars on short notice and organizing groups to provide on a coeducational basis training opportunities that are usually male-oriented.

Mabel Yuen Receives Special Achievement Award

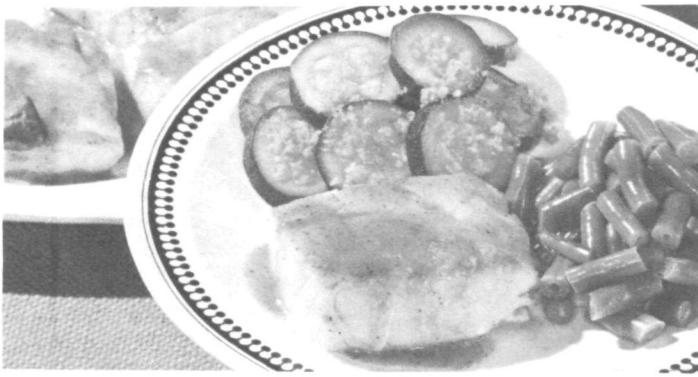
Mabel Yuen, Employee Development Specialist at NOAA's Northwest Administrative Service Office in Seattle, Wash., recently received a special achievement award.

Miss Yuen was cited for



Miss Yuen received her award from John M. Patton, Jr., former NASO Director.

recipe of the week



SPICY SEAFOOD

- 2 pounds cod or other thick fish fillets, fresh or frozen
- 2/3 cup tomato juice
- 3 tablespoons vinegar
- 2 tablespoons salad oil
- 1 envelope (5/8 ounce) old-fashioned French dressing mix

Thaw frozen fillets. Skin fillets and cut into serving-size portions. Place fish in a single layer in a shallow baking dish. Combine remaining ingredients and mix thoroughly. Pour sauce over fish and let stand for 30 minutes, turning once. Remove fish, reserving sauce for basting. Place fish on a well-greased broiler pan. Broil about 4 inches from source of heat for 4 to 5 minutes. Turn carefully and brush with sauce. Broil 4 to 5 minutes longer or until fish flakes easily when tested with a fork. Makes 6 servings.

(Approximately 130 calories in each serving.)

next week's best fish buys

According to the NMFS National Consumer Educational Services Office in Chicago, the best fish buys for the next week or so are likely to be fish sticks and portions and small shrimp along the Northeast Seaboard; fresh spot and grey sea trout in the Middle Atlantic States, including the

D.C. area; breaded shrimp and king mackerel in the Southeast and along the Gulf Coast; frozen ocean perch fillets and fresh northern pike in the Midwest; canned tuna and fresh salmon in the Northwest; and fresh butterfish fillets and Pacific red snapper in the Southwest.

NOAA Unit Citation Awarded To Fleet Inspection Team

A NOAA Unit Citation has been awarded to the NOAA Fleet Inspection Team by Rear Admiral Allen L. Powell, Director of the National Ocean Survey. The team was established two years ago after formation of the NOAA Fleet to conduct annual inspections of the 25 ships in order to insure the maximum operational capability of the fleet.

The team has been headed by Lieutenant Commander Merritt N. Walter and has included as its other permanent member Herman Frome, both of the NOS Headquarters in Rockville, Md. During the annual in-

spections, other inspectors are appointed from the marine centers on a ship-by-ship basis. An engineering inspector also works with the team under contract.

Other individual members of the team to whom citation was awarded include John R. Schmitz, Edward L. Jones and Herbert L. Seimund of the Pacific Marine Center, Seattle, Wash.; Albert L. Pardue, Jr., Atlantic Marine Center, Norfolk, Va.; Sven J. Svensson, National Marine Fisheries Service, Pascagoula, Miss.; and Lieutenant Commander Roy K. Matsushige, NOS Headquarters.



(From left) Lt. Commander Matsushige, Lt. Commander Walter, Admiral Powell, and Mr. Frome.

Lt. Commander Walter also received a Department of Commerce Bronze Medal for his role in organizing and leading the team since its inception two years ago.

Laurence G. Shaffer Appointed Met. Services Assistant at CRH

Laurence G. Shaffer was recently appointed Assistant Chief of the Meteorological Services Division at National Weather Service Central Region Headquarters in Kansas City, Mo. He is widely

known in the Region for his activities as Emergency Warning Meteorologist since April 1968 and will continue to give special attention to these responsibilities in his new position.

Mr. Shaffer was formerly Meteorologist in Charge at the Weather Service Office at Goodland, Kans., and also served at Pendleton, Oreg., and Seattle, Wash. He is a native of Kansas and served as a Weather Officer during World War II.

His university training includes work at Kansas State University, the University of Chicago, University of Wisconsin, and University of Michigan.



Minced Fish Seminar Attracts Representatives From Four Nations

Nearly 200 persons from at least four nations, including representatives of various segments of the fishing industry, scientists, and the academic world, attended a recent two-day technical seminar in Boston, Mass., on the production and uses of new fish products. The seminar was sponsored jointly by the National Fisheries Institute representing industry, and NOAA.

This was the second such seminar to exchange scientific, industrial, and marketing information dealing with minced fish, which is the official term used to describe fish flesh obtained by stripping the muscle tissue from skin and bones using specialized mechanical equipment. These machines recover large amounts of edible fish flesh ordinarily wasted when conventional processing equipment is used, which can be formed into various products including frozen fish blocks. The blocks subsequently can

be cut into desired shapes, sizes, and weights for use as fish sticks, portions, or combined with other ingredients and made into a variety of recipes.

The Boston seminar was divided into five sessions and included government and industry speakers from Canada, Scotland, and the United States. The U.S. participants on various panels came from the National Marine Fisheries Service, the Food and Drug Administration, National Fisheries Institute, and several universities.

A highlight of the seminar was a discussion concerning proposed quality standards for fish blocks which had been distributed shortly before the meeting. Among the topics were various aspects of the proposed standards dealing with color and texture, the absence of defects such as bone material and fragments, shelf life relating to flavor, and product deter-

ioration. An industry spokesman from Denmark indicated that the proposed standards were a good start, but stated that some sections of the draft quality requirements needed clarification and modification before publication. Industry spokesmen also advised that additional work to improve the draft standards is needed and agreed to provide input toward this end.

Other highlights were the identification and discussion of the wide variety of fish species on which research work has already been done, demonstrating progress thus far, and the wide ranging potential for using wholesome material from species of fish that are relatively unknown to consumers at this time, such as mullet, ocean pout, and croaker.

The proceedings of the seminar are being compiled for publication and will be distributed to the interested public later this year.

Dreumont Is MIC at WSO Brownsville

Antonio A. Dreumont has been selected as Meteorologist in Charge of the Weather Service Office at Brownsville, Tex. He succeeds Charles H. Carpenter, who has retired.

Mr. Dreumont began his career with the NWS as a Meteorological Intern at Brownsville in 1963. While there, his duties were primarily in agricultural forecasting, but he also worked in the radar, hydrologic and observation programs. His other Weather Service posts included assignment as an



Antonio A. Dreumont

Aviation Forecaster at Atlanta, Ga., and as a Weather Service Evaluation Officer at San Francisco, Calif.

Mr. Dreumont earned his Bachelor of Science Degree in Meteorology at Texas A&M in 1963.

and thence to Tidal Station 30 at the Brooklyn Bridge.

The networks are maintained by the NGS and surveyed periodically because of changes resulting from earth movements. The route now being surveyed from the Canadian Border was last surveyed 20 years ago, except for the initial portion, which was surveyed in 1919. Measurements are being made at half-mile intervals in cities and towns and one-mile distances in rural areas. The measurements will provide starting data which will assist surveyors and engineers in their projects.

Our Complete Research Diver Training Course

Robert J. Goodnough of the Water Levels Branch of the National Ocean Survey's Lake Survey Center and former LSC (now Great Lakes Environmental Research Laboratory) divers Richard L. Chambers, Lieutenant (junior grade) Donald D. Winter, and Lieutenant (junior grade) Thomas Meyer have completed a Research Diver Training Course sponsored by the Michigan Sea Grant Program at Omena, Mich. The course included approximately 50 hours of instruction and intensive training in such exercises as underwater and night diving, search and recover light salvage, diver first aid, habitat diving, and surface-supplied air diving.

The course was under the direction of Dr. Lee H. Somers, Diving Coordinator of the University of Michigan. Ronald W. Dana of the LSC is on Dr. Somers' staff.

NWS Contributes To Authenticity Of "Hurricane"

The premier film of the 1974-75 season of the ABC Tuesday Movie of the Week, "Hurricane," owes much of its authenticity to the technical expertise and combined efforts of the National Weather Service and its National Hurricane Center in Miami, Fla.

In the film, produced by Metromedia Producer's Corporation, Hurricane Hilda is seen from the vantage point of the crew of a C130 reconnaissance plane; from a boat trapped in the Gulf of Mexico; and from the perspective of a handful of townspeople whose only reaction to the impending hurricane was to have a party.

WMAL, Channel 7 in Washington, D.C., will air the film at 8:30 p.m. on September 10. In other areas consult your local listings for time and station.

NGS Survey Party To Begin Project In New York State

The National Geodetic Survey is scheduled to begin about the first of September a geodetic survey in New York State along a 25-mile route from Yonkers to Battery Park to the Brooklyn Bridge.

The route is part of the national network of elevations which, with the national network of distances, forms the basis for all other forms of surveying.

The two-week survey is a continuation of one which began last year at the Canadian border. When completed, the survey will have covered about 400 miles from St. Regis to Metropolitan New York. Overall cost of the survey is estimated at \$182,000.

The 15-man leveling survey party headed by James W. Taylor will measure over 30 elevations beginning at Yonkers and progressing south to Battery Park at the foot of Manhattan Island

notes about people

Dr. Ebum Oni, noted geophysicist and senior lecturer in the physics department of the University of Ibadan, Nigeria, is visiting the Environmental Data Service's National Geophysical and Solar-Terrestrial Data Center in Boulder, Colo., as a senior Fulbright-Hays scholar. Dr. Oni was selected from many applications for the scholarship (under the committee on International Exchange of Persons) on recommendation of the U.S. Ambassador to Nigeria, and is sponsored by the National Research Council of America.

She is a research associate with the Cooperative Institute for Research in the Environmental Sciences (CIRES), a joint program of the Environmental Research Laboratories and the University of Colorado. During her visit to Boulder, Dr. Oni has concentrated on problems of electrical conductivity of the earth. In addition, she has assisted in preparation of a World Magnetic Chart, supplying past observatory data from Ibadan to fill in gaps on the chart.

Joseph J. Borek has joined the National Ocean Survey's Office of Program Development and Management as a Program Analyst and will establish a program evaluation and monitoring system for critical major NOS projects.

Prior to employment with NOAA, he spent five years as a staff consultant with U.S. Postal Service Industrial Engineering, and served with the Defense Department for 10 years as an Industrial Engineer in Europe and in Springfield, Mass.

Mr. Borek has an Associate Degree in Industrial Engineering from Worcester (Mass.) Junior College and a Bachelor of Science Degree in Industrial Engineering from the University of Bridgeport.



Participants in a recent effective supervision class held in the newly renovated training room in the North Bethesda Office Complex in Rockville, Md., were (seated, from left) Paul Dailey, National Weather Service, Leonard Kmiecik, NWS; Anne Manning, Public Affairs; John McAlvin, NWS; Paul Lazarus, NWS; Donald Edmonds, NWS; Richard Schween, National Marine Fisheries Service; Max Wiczer, National Ocean Survey; Ernest Shepard, NOS; John Burrelli, NOS; Leon Townsend, NWS; Joe Vazzo, NWS; Barry Kirshen, National Environmental Satellite Service; Donald Fitzgibbon, NMFS; and Robert Mechlenburg, NOS.

Leon R. LaPorte, a physical scientist with the Environmental Data Service, represented the International Coordinator for the International Cooperative Investigations of the Tropical Atlantic at the final editorial meeting for the ICITA Atlas, Volume II, Chemical and Biological Oceanography. Also participating in the meeting, held at UNESCO in Paris, France, were Dr. Helios Neuymin, Deputy Director of the Marine Hydrophysical Institute (MHI), Sevastopol, U.S.S.R.; Alexander Novosyolov, Chief of the Chemical Oceanography Laboratory, MHI; and Dr. Oleg Mamayev, Assistant Secretary of UNESCO's Intergovernmental Oceanographic Commission.

The participants reviewed all the material prepared for the atlas, decided on the necessary corrections, and agreed to present the final copy of the atlas to the Executive Council of IOC in March 1975 with a recommendation that UNESCO arrange for publication and provide funds for printing.

James B. Harrison and Francis P. Richards, both physical scientists, have been transferred from the International Field Year for the

Great Lakes Project Office to the Environmental Data Service's Center for Experiment Design and Data Analysis. Mr. Harrison is a member of the CEDDA Data Management Projects staff and Mr. Richards is with the GATE Convection Subprogram Data Center.

Robert W. Huff, formerly Chief of the Environmental Data Service's Atmospheric Sciences Library in Silver Spring, Md., has been reassigned to the position of Chief of EDS' Marine and Earth Sciences Library in Rockville, Md. Mr. Huff served as Chief of the ASL since November 1970. His previous experience includes three years as Chief of the Auke Bay Biological Laboratory Library in Alaska, and two years as Chief of the National Oceanographic Data Center's Archives Branch in Washington, D.C.

Dr. Philippe Waldteufel of the CENTRE NATIONAL D'ETUDES DES TELECOMMUNICATIONS in Paris, France, is spending six months as a visiting scientist at the Environmental Research Laboratories' National Severe Storms Laboratory in Norman, Okla. He is working on problems relating to Doppler radar observations of

the lower atmosphere group at NSSL.

Dr. Richard J. Dowling As group leader in the development of a six-centimeter (transmitted wavelength) dual Doppler radar facility for his country, Waldteufel is particularly interested in the technical scientific information provided by the advanced centimeter dual Doppler radar system developed at NSSL.

Doppler radars, unlike conventional radars, measure the rate at which airborne objects—such as dust particles, water droplets or hail—move toward or away from its sensing antenna. A dual Doppler system can yield information on both the magnitude and direction of particle motion. With such a system NOAA scientists can see patterns of convection in the atmosphere and apply their knowledge in predicting dispersion paths of pollutants, and recognizing characteristic internal patterns of tornados producing thunderstorms.

While no Doppler radar are yet operating in France, Dr. Waldteufel's group hopes to complete its Doppler radar facility by the end of 1976 for use in analyzing the environment and its effects on communications.



National Oceanic and Atmospheric Administration

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