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NOAA Purchases Two Flying Laboratories

NOAA is purchasing two new Lockheed WP-3D "Orion" aircraft, which will be operated by the Environmental Research Laboratory in Miami, Fla.

Never before has NOAA purchased a new airplane, built from the production line up for the special needs of atmospheric and oceanic airborne research.

"These new aircraft are uniquely suited to the difficult work they will be doing," Commerce Secretary Frederick B. Dent said, in announcing their purchase this week. "They carry the world's most advanced airborne research data systems, and have the strength and stamina to support NOAA's environmental mission anywhere in the world."

"We view them as the mainstay of Federal airborne atmospheric research and weather modification experiments from now into the 1980's, and perhaps longer."

Cost of each aircraft will be about \$7 million, with re-search instrumentation bringing total cost to about \$10 million each before the flying laboratories are operational. The first P-3 is scheduled for delivery in May 1975, the second, in January 1976. Instrumentation will be installed by the summer of 1976, when the airplanes will begin Project Stormfury, NOAA's hurricane-modification experiment.

According to ERL Director Dr. Wilnot N. Hess, the

New Marine Petroleum and Minerals Advisory Committee Members Named

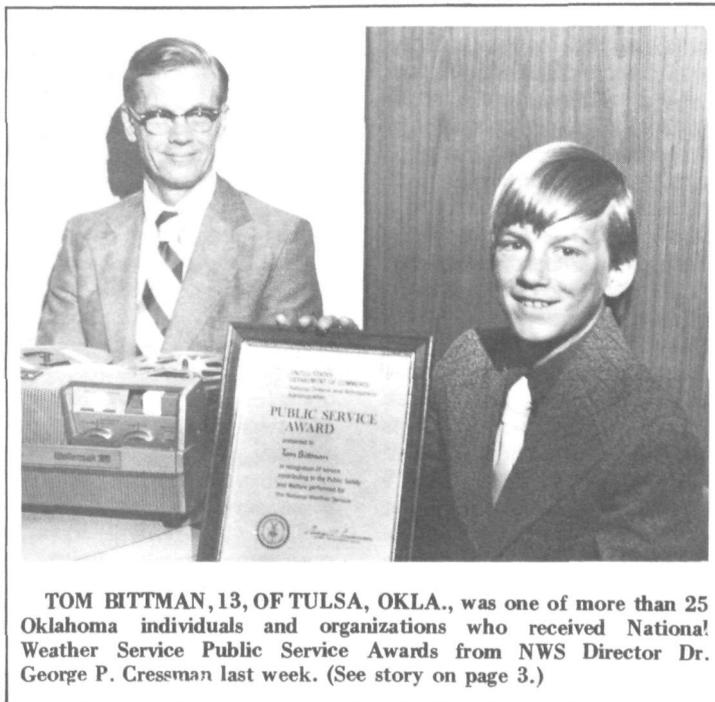
Secretary of Commerce Frederick B. Dent has announced the appointment of fifteen distinguished persons to serve as members of the newly formed Marine Petroleum and Minerals Advisory Committee.

The purpose of the Committee is to advise the Secretary of Commerce on matters pertinent to the Department's responsibilities related to marine petroleum and marine minerals resources, on means to facilitate cooperation between the private sectors and government in these matters, and on related Law of the Sea affairs. Under provisions of the Committee's charter there may be up to twenty-five members, each serving a two-year term. The members represent the industrial, labor, academic, legal, environmental, and economic sectors concerned with the management, use, conservation, and development of marine petroleum and marine minerals resources.

The Committee will report to the Secretary through the Administrator of NOAA. Howard W. Pollock, NOAA Deputy Administrator, will serve as Chairman and David H. Wallace, NOAA Associate Administrator for Marine Resources, will serve as Vice Chairman. The Committee's first meeting will be held on October 22 and 23, 1974, at the Department of Commerce Building, Washington, D.C.

Members appointed are:

—Dr. Thomas D. Barrow, Director and Senior Vice



TOM BITMAN, 13, OF TULSA, OKLA., was one of more than 25 Oklahoma individuals and organizations who received National Weather Service Public Service Awards from NWS Director Dr. George P. Cressman last week. (See story on page 3.)

NOAA Scientists Participate In 4-Nation Undersea Project

An American scientist-diver team provided by NOAA joined teams from the Federal Republic of Germany, France, and Great Britain in a three-week undersea research project in the Baltic Sea beginning August 19.

The project aims to develop techniques for monitoring metabolic responses and characteristics of bottom communities and their surrounding environment for use in assessing and forecasting environmental health; to evaluate the performance of the underwater laboratory "Helgoland" in supporting scientific research; and to

evaluate the performance of scientific instrumentation in the cold environment.

The underwater laboratory will be located about 1.5 miles (2.5 km.) offshore from the town of Niendorf at a depth of about 50 feet (15 meters). It consists of two cylindrical sections, each with a diameter of eight feet and length of 40 feet, providing 1200 cubic feet of living and working space. The system is transportable and is towed to the operating site for deployment on the seabed.

"Helgoland" is connected by umbilical cables to a rugged surface buoy

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NOAA Purchases Two Flying Laboratories for Use by RFF

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new airplanes will do much toward bringing experimental weather modification techniques to near-operational status.

"Over the past decade," he explains, "researchers in NOAA and other organizations have taken important strides toward achieving beneficial results from weather modification techniques.

"There is evidence, for example, that cloud-seeding experiments of the type used in Project Stormfury can reduce hurricane winds, and perhaps mitigate these storms' destructive effects. Our scientists in Florida are actively pursuing research to achieve the merging of cumulus cloud systems, and thereby greatly increase the efficiency of precipitation. Researchers in Colorado are looking toward modification of extratropical cyclones, the large low-pressure systems that dominate the weather map. And we are studying the suppression of destructive lightning.

"These new aircraft will provide these scientists, and

their colleagues from other organizations and nations, with the most advanced airborne laboratories in the world. In a very real sense, the new research aircraft and their uniquely experienced crews are major partners in bringing the potential of scientific weather modification within the human grasp."

The airplanes will eventually replace three older research aircraft at the Miami-based Research Flight Facility, which provides aircraft support for such NOAA activities as hurricane experiments, winter storm surveillance, satellite-sensor development, and a variety of atmospheric research projects.

The P-3D is the most recent descendant of a design familiar to most air travelers as the turboprop "Electra," although the resemblance is only skin-deep—the Orion series is a tougher, more powerful airplane than its civilian ancestor, developed to carry out the U.S. Navy's anti-submarine warfare and weather reconnaissance missions. Since 1959, more than 400 Orions have been

built by the Lockheed-California Company in Burbank, and today serve with the U.S. Navy and the defense forces of Australia, Norway, Spain, and New Zealand.

The Orion is powered by four Allison turboprop T-56-A-14 engines, each rated at 4,910 equivalent shaft horsepower. It can operate effectively from sea level to 30,000 feet (9,100 meters), loiter at speeds between 180 and 225 knots (355 and 415 kilometers per hour), and attain dash speeds in excess of 400 knots (740 kilometers per hour).

In its NOAA configuration, the Orion lends its special capabilities to the special needs of environmental research and weather modification. It will carry a flight crew of four—pilot, co-pilot, flight engineer, and navigation-communication operator—and a mission crew of twelve scientists, technicians, and observers. Seats will also be provided for five passengers.

The aircraft will have a maximum range (with a 12,000-pound, or 4,500-

kilogram, payload) of more than 4,200 nautical miles (7,800 kilometers), with a two-hour fuel reserve based on four-engine operation. It will be capable of loitering in a target area 650 nautical miles (1,200 kilometers) from base for ten hours at 28,000 feet (8,500 meters) altitude, with a two-hour fuel reserve remaining upon return to base. The airplane will also be able to accomplish the same mission while loitering for eight hours at 5,000 feet (1,500 meters) and will be able to operate for 10 hours at 1,500 feet (460 meters).

The principal visible difference between the NOAA craft and their Navy cousins are two additional bubble windows in the fuselage, an additional scientist station window aft of the pilot's station, and window fittings for external instrumentation and seeding-agent stores. The aircraft mounts a C-band radar in a large blister radome just aft of the nosewheel well, a weather radar in the nose radome, and an X-band radar in a special tail radome.

Elmer Newman Award Selection Committee Announced

T. P. Gleiter, Assistant Administrator, and Percy L. Johnson, President of American Federation of Government Employees Local 2703, have announced the forma-

tion of a committee to select the 1974 recipient of the Elmer Newman Award.

The Elmer Newman Award was created in 1973 to honor the NOAA Employee who contributes the

most to improving Labor-Management Relations. The first award was given to Elmer Newman.

The committee is composed of Labor & Management representatives. This year the committee comprises Chairman, Frank Christhilf, Special Programs, NOAA Personnel Division; Jeanette M. O'Connor, Cartographer, Marine Chart Division; Helen Machin, Chief, Washington Field Finance Office; Howard Childress, Chief, Vehicle Fleet Management; and Francis Sly, Office Services Assistant, Administrative Operations Division.

In the near future, the committee will issue guidelines and instructions for nominating candidates for the Newman Award.



(Front row, from left) Ms. Machin, Mr. Christhilf, Ms. O'Connor, (back row, from left) Mr. Gleiter, Mr. Johnson, Mr. Childress, and Mr. Sly. -

noaa week

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

Tulsa, Drumright Receive Public Service Awards

The cities of Tulsa, and Drumright, Okla., and more than 25 individuals and organizations in those cities received the National Weather Service's highest honor—the Public Service Award—for preparedness plans and efforts resulting in life-saving actions when tornadoes and floods struck Oklahoma with devastating fury on June 8, 1974.

NWS Director Dr. George P. Cressman presented the awards at separate ceremonies in the two cities on August 15. He cited each for its "outstanding example of community management and preparedness." He said that the preparedness actions on June 8 and the state of readiness by the communities and individuals "should be held up as an example to others across the Nation."

In Tulsa, Dr. Cressman presented the award to the Mayor Robert LaFortune. Twelve radio and television stations were cited for their outstanding jobs in disseminating tornado watches and warnings and safety instructions for as long as 12 hours before the storm hit. One radio station, KRMG, was, for a time, the only broadcast outlet with power. An open telephone line between the Tulsa Weather Service Office and KRMG permitted a continuous flow of vital information to the public. The Tulsa Tribune received an award for carrying advanced notice of the tornado and flood possibilities in its edition five to eight hours before the

event.

The media and the actions of an extremely effective spotter organization of amateur radio operators—the Tulsa Repeaters—were credited as being the major factors in holding down the loss of lives. The storm did an estimated \$30 million in property damage in Tulsa and one death was attributed to the storm.

A Public Service Award was also presented to Tom Bittman, 13, of Tulsa, for making his tape recording of the sound of the tornado's fury available to NOAA for research and educational use. The tornado passed directly over the Bittman home and caused \$30,000 damage. Tom, who had learned tornado safety rules in studying for his boy scout badge, instructed his parents to take cover.

At Drumright, a community of 4,000, forty miles southwest of Tulsa, Dr. Cressman made special note of a comprehensive siren warning system and a weather watch tower used in its preparedness plans.

On June 8, sighting of the tornadoes from the watch tower and quick activation of the sirens kept the death toll low. More than 100 patients of the Drumright Nursing Home were moved to interior hallways. The nursing home was destroyed. Seven of the 13 deaths in Drumright were from the nursing home. Public Service Awards were presented to Mr. and Mrs. James Cooper, owners of the home, and Mrs. Maxine Tiger, the nurse in charge the afternoon of the tornado. More than 400 homes in Drumright sustained property damage, 94 being completely destroyed by the giant storm.

Dr. Cressman was accompanied at the Drumright ceremonies by Lawrence Mahar, NWS Southern Region Director, and Ben Barker, Official in Charge at WSO Tulsa.

Cooperative Efforts Produce Successful Mercy Mission

The U.S. GATE Field Office, NOAA's Research Flight Facility, and the Senegalese Navy together carried out a successful mercy mission recently.

Ensign Dennis J. Sigrist of the NOAA Corps was seriously ill aboard the *Researcher*, 600 miles from shore at its station in the GATE ship array.

On Wednesday, August 7, Captain Lavon Posey, Commanding Officer of the *Researcher*, requested and received permission from U.S. Field Office Director William S. Barney to leave the ocean post and head for Dakar.

As the ship steamed toward port, Ensign Sigrist's condition grew worse. On the morning of August 8, the U.S. Field Office asked the Senegalese Navy to send its ship *St. Louis* to the sick man's aid. Responding quickly, the *St. Louis*—with a U.S. physician, Dr. William

Takahashi of Boulder, Colo., aboard—left Dakar about noon to intercept the *Researcher*.

Meanwhile, the U.S. GATE Field Office staff collected urgently needed antibiotics, glucose solution, and other medications for air drop to the *Researcher*.

The WC-130 of NOAA's Research Flight Facility took off from Dakar's Yoff Airport at 2 p.m., carrying a box packed with emergency medical supplies to the ship, still some 300 miles at sea. In little more than an hour, RFF pilot Howard Ticknor and co-pilot Robert Sandquist, a Commander in the NOAA Corps, spotted the *Researcher*. As the plane descended to a 100-foot altitude, its giant rear cargo doors ground open. Loadmaster James Netterville dropped the bright blue plastic-wrapped package within 200 feet of the ship.

"Our compliments to your bombardier," the *Researcher* radioed.

"Thanks. We hope it helps," pilot Ticknor responded.

While the *Researcher* continued toward its rendezvous with the *St. Louis*, the medicines were administered intravenously to the patient, and his condition improved.

At 1:50 a.m., August 9, the two ships met at sea, and Ensign Sigrist was transferred in a lifeboat to the Senegalese vessel.

The *St. Louis* sped toward Dakar, while the *Researcher* headed back to rejoin the GATE ship array.

The *St. Louis* reached port early in the afternoon, and the sick officer was taken immediately to the Hospital Principal. Tests there showed that he had malaria.

Ensign Sigrist has since recovered, and is expected to sail with the *Researcher* for the third GATE experimental phase, which begins August 30.

NOAA Careers Explained In Vocational Workshop

Robert V. Ochiner, Director of the Environmental Data Service's National Oceanographic Data Center; Patricia E. Kirk, also of NODC; and Lieutenants Charles Rives and William Wert of the National Ocean Survey's Atlantic Marine Center recently participated in a Marine Environmental Vocational Workshop for 30 high school juniors and seniors held at the Beaufort Technical Education Center in Beaufort, S.C. The Center, in cooperation with Clemson University, sponsored the workshop to give the students an opportunity to examine career potential in marine industry and related fields. The workshop ended with a tour of the South Carolina Marine Resources Center and research laboratories in Charleston, S.C.

Correction

The new commercial telephone number of the Environmental Data Service's National Climatic Center in Asheville, N.C., was incorrectly listed in NOAA WEEKLY August 16, 1974. The correct number is (704) 258-2850.

personnel perspective

Current Vacancies in NOAA

To insure that NOAA employees are aware of job possibilities throughout the agency, a list of current NOAA-wide vacancies is published below. Employees

interested in any of the listed vacancies should contact their servicing personnel office for information on where to apply.

Announcement	Position Title	Grade	MLC	Location	Issue Date	Closing Date
105-75	Meteorological Technician	GS-9	NWS	Syracuse, N.Y.	8-12-74	8-26-74
106-75	Meteorological Technician	GS-9	NWS	Camp Springs, Md.	8-12-74	8-26-74
107-75	Meteorological Technician	GS-10	NWS	Minneapolis, Minn.	8-12-74	8-26-74
108-75	Supervisory Meteorologist	GS-11	NWS	Palmdale, Calif.	8-12-74	8-26-74
109-75	Meteorologist	GS-13	ERL	Washington, D.C.	8-12-74	8-26-74
110-75	Meteorologist	GS-13	ERL	Corvallis, Oreg.	8-12-74	8-26-74
111-75	Meteorologist	GS-13	ERL	Las Vegas, Nev.	8-12-74	8-26-74
102-75	Physical Scientist	GS-15	ERL	Ann Arbor, Mich.	8-8-74	8-29-74
103-75	Oceanographer	GS-14	ERL	Ann Arbor, Mich.	8-8-74	9-3-74
114-75	Meteorological Technician	GS-12	NWS	Honolulu, Hawaii	8-19-74	9-3-74
115-75	Engineering Technician	GS-10	NWS	Honolulu, Hawaii	8-19-74	9-5-74
117-75	Electronics Technician	GS-9	NWS	Kansas City, Mo.	8-21-74	9-5-74
118-75	Electronics Technician	GS-7	NOS	Washington, D.C.	8-21-74	9-7-74
121-75	Administrative Officer	GS-11	ERL	Stony Brook, N.Y.	8-23-74	9-7-74
123-75	Research Meteorologist	GS-14	EDS	Columbia, Mo.	8-23-74	9-10-74
112-75	Fishery Administrator	GS-15	NMFS	Washington, D.C.	8-19-74	9-10-74
113-75	Public Information Officer	GS-14	HDQS	Rockville, Md.	8-19-74	9-10-74
116-75	Physical Scientist	GS-13	NOS	Rockville, Md.	8-19-74	9-12-74
59-75	Supervisory Scientist	GS-15	NOS	Rockville, Md.	8-21-74	9-12-74
103-75	Physical Scientist	GS-14	NOS	Rockville, Md.	8-21-74	9-12-74
119-75	General Scientist	GS-14	NOS	Rockville, Md.	8-21-74	9-12-74
120-75	Electronics Engineer	GS-11	NOS	Norfolk, Va.	8-21-74	9-14-74
124-75	Electronics Technician	GS-9	NWS	Silver Spring, Md.	8-23-74	9-17-74
125-75	Public Information Officer	GS-14	HDQS	Rockville, Md.	8-26-74	9-17-74
126-75	Legislative Advisor	GS-14	HDQS	Washington, D.C.	8-26-74	9-17-74
127-75	General Scientist	GS-12	NESS	Suitland, Md.	8-26-74	9-11-74
128-75	Supervisory Research Chemist	GS-13	NMFS	Gloucester, Mass.	8-27-74	9-11-74
129-75	Civil Engineering Technician	GS-9	NOS	Detroit, Mich.	8-27-74	9-11-74
130-75	Electronics Technician	GS-10	NWS	Wallops Island, Va.	8-27-74	9-11-74
131-75	Supervisory Meteorologist	GS-15	NWS	Silver Spring, Md.	8-27-74	9-11-74
132-75	Electronics Technician	GS-12	NWS	Silver Spring, Md.	8-27-74	9-11-74
133-75	Meteorological Technician	GS-10	NWS	Goodland, Kans.	8-27-74	9-11-74
134-75	Meteorological Technician	GS-10	NWS	Sault Ste. Marie, Mich.	8-27-74	9-11-74
135-74	Meteorological Technician	GS-10	NWS	Indianapolis, Ind.	8-27-74	9-11-74
136-75	Electronics Technician	GS-10	NWS	San Nicolas Island, Cal.	8-28-74	9-13-74

Employment of Women in The Federal Services Rises

The U.S. Civil Service Commission announced today that the October 1973, annual survey of employment of women in the Federal Government shows gains in overall percentage of women employed in full-time white-collar jobs and in upward movement of women in the work force.

"The trend continues steadily in the right direction, with further gains in the employment of women at a time when the overall work force is declining," Civil Service Commission Chairman Robert E. Hampton commented. "But we are not and cannot be satisfied even with the considerable improvement made since 1968. Women still face barriers to employment and advancement, so we must continue to work at removing remaining obstacles to full equality of opportunity for them."

The percentage of women in the white-collar work force (excluding the U.S. Postal Service) increased from 40.4 percent in 1972 to 40.8 percent in 1973.

NOAA's figures for that same period went from 30.8 in 1972 to 20.7 in 1973. While the overall employment of women in the higher GS-grade levels dropped 0.1 percent, significant increases were made in employment of women in the higher GS-grade levels.

Within NOAA, employment of women in grade levels GS-1 to GS-6 showed an increase from 61.6 to 62.9 percent with overall Federal averages showing a similar 1.3 percent increase. In grade levels GS-7 to GS-12, employment of women in NOAA increased from 11.2 to 11.8 percent. The rise in total Federal employment of women in these grade levels was from 22.0 to 23.4 percent.

There was an important increase for NOAA women in the GS-13 to GS-18 levels showing an improvement from 2.0 to 2.3 percent. This compares with an overall Federal increase of 4.2 to 4.5 percent.

A comparison of NOAA percentages with those of the total Federal government reveals that, although NOAA is making progress in providing women with higher-paying and more responsible jobs, further progress is certainly necessary.

Energy-Wise Buying Practices

Can your purchases in the market place help conserve energy? Most Americans don't realize that the purchase of certain kinds of materials can help save fuel. One of the most obvious ways is to buy recycled material; but there are several other wise shopping methods we can use to help our nation in its energy conservation. Listed below are tips for shoppers to help promote energy savings.

—Buy products made of recycled materials whenever they are available. More energy is used in production of products from virgin materials than from recycled or reclaimed materials. For example, producing steel from scrap requires one-fourth less energy than using ores. To make a product from recycled aluminum requires about 1/20th of the energy needed for the same product made from the ore.

—Buy articles made of materials which offer opportunities for recycling.

—Buy products made of natural materials rather than synthetics. Garments made from natural wool or cotton require less energy than those made from synthetics. Large amounts of energy are consumed in the production of modern man-made materials.

—If you do buy synthetic garments, choose those that require little or no ironing to conserve the energy cost of upkeep.

—Buy durable products. Less durable products require earlier replacement, and putting more products on the market uses more energy. The dollar cost of your investment also increases when averaged over a period of time.

—When buying operating equipment such as automobiles, appliances, pumps, fans, compressors, boilers, etc. make the selection on the basis of cost plus operating expense over the expected lifetime of the product, rather than on the basis of minimum purchase price alone. High operating costs over a period of time can add considerably more to the total cost than the difference in purchase price.

Personnel Records

The Director of Personnel has alerted the several units of the Department that the Civil Service Commission has found violations of personnel records keeping regulations. The admonition was made in concert with the issuance of a new Civil Service Commission directive dealing with official personnel records and files. Of particular note is the proliferation of supervisory, or other line operating level, personnel files. These files may contain matter which should be in the official file kept by their servicing personnel office, or belong to an employee. This line-kept "personnel" file has further been the subject of Union comment and criticism and it should be discontinued.

This opportunity is also taken to remind all employees that they are responsible for keeping information in their files on a current basis. Any documentation germane to their positions such as training records, awards, commendations, etc., should be referred to their servicing personnel office for appropriate archiving, if it is believed it may have been missed.

That's a Personnel Question

In a continuing effort to help NOAA employees be informed about services offered by the personnel office, Personnel Perspective is again offering employees the chance to submit questions.

Any questions that employees have concerning personnel can be submitted to: Personnel Perspective, NOAA Personnel AD423, NBOC-2, Rockville, Md. 20852.

This service was previously announced in the October 13, 1972, issue of Personnel Perspective. We would like to re-open this service and welcome any questions. Any general information questions will be answered in later issues of Personnel Perspective. This service should be of value to employees and we encourage any questions.

Summer Employees



NOAA summer student employees attended orientation.

One hundred and forty high school and college student employees are completing a successful summer with NOAA in the Washington metropolitan area. Program coordinators for the Washington area, Mr. Charles Dorsey and Ms. Pat Barr, have developed the program so that students are able to receive individual and group counseling through career seminars. One of the seminars included a talk by Secretary of Commerce Frederick B. Dent.

The summer employee program combines several groups: included are the Summer Aids, Junior Fellow, Federal Summer Interns, and Student Assistants.

These programs give students a wide variety of work and experience with professionals. One of the Summer Interns was able to go to Africa to work on the Global Atmospheric Research Program-Atlantic Tropical Experiment (GATE) project.



CATFISH WITH HERB-MUSHROOM SAUCE

- 6 skinned, pan-dressed catfish, fresh or frozen
- 1 teaspoon salt
- 1 can (4 ounce) mushroom stems and pieces, drained
- 1/4 cup sliced green onion
- 1/4 cup melted margarine or cooking oil
- 2 tablespoons chopped pimiento
- 2 tablespoons lemon juice
- 1/4 teaspoon leaf thyme

Thaw frozen fish. Clean, wash, and dry fish. Sprinkle salt evenly over inside and outside of fish. Place in well-greased baking pan, 13 by 9 by 2 inches. Cook mushrooms and onion in melted margarine or cooking oil until onion is tender. Add Pimiento, lemon juice, and thyme; mix well and spoon over fish. Bake in moderate oven, 350° F., for 25 to 30 minutes or until fish flakes easily when tested with a fork. Baste fish with pan juices several times during baking. Makes 6 servings.

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 grey sea trout and fresh flounder fillets along the Northeast Seaboard; fresh spot and fresh croaker in the Middle At-

lantic States, including the D.C. area; shrimp and king mackerel in the Southeast and along the Gulf Coast; dressed catfish and lake trout in the Midwest; halibut and fresh snapper fillets in the Northwest; and canned tuna and whiting in the Southwest.

Virginia Is Awarded \$251,044 Coastal Zone Management Grant

The State of Virginia has been awarded a NOAA grant totaling \$251,044 for the state's first year's program to develop a coastal zone management program.

The grant was awarded under provisions of the Coastal Zone Management Act. The 1972 Act seeks to reconcile growing demands on America's seashores and Great Lakes coasts where oil refineries, beaches, harbors, power plants, wildlife refuges and other development all compete for a relatively limited, but fragile, strip of shoreline.

Virginia will take about three years to design an approvable program to protect its coastal environment. First-year plans include the encouragement of widespread public involvement to judge how the coastal zone

may be best used to benefit all.

The State will also attempt during the first year to identify its coastal zone boundary, geographic areas of vital concern within the boundary, and permissible land and water uses in the coastal zone which have a significant impact upon the coastal waters. A portion of the grant will be allotted to the Virginia Institute of Marine Science to assist in developing the program.

Virginia Governor Mills E. Godwin, Jr. has designated the Division of State Planning and Community Affairs to administer the grant from the Office of Coastal Zone Management. In addition to the Federal grant, the State will provide \$125,522 to complete the first year's work.

NOAA Scientists Participate in Undersea Project

(Continued from page 1)

anchored nearby, which provides the power, life support, and communications facilities. Built in 1969, the system has been demonstrated in the North Sea to provide an all-weather, cold water operations capability.

U.S. Coordinator for the scientific mission is Dr. J. Morgan Wells of NOAA, who also heads the four-man U.S. aquanaut team which includes also William Phoel from the National Marine Fisheries Service laboratory in Sandy Hook, N.J., and Dr. Maurice Lynch and Michael Castagna of the Virginia Institute of Marine Sciences.

In addition, Dr. William J. Hargis, Jr., Director of the Virginia Institute of Marine Sciences, will participate, and Commander Lawrence Bussey, USN, will coordinate mission operations with the German team. Project Coordinator for the U.S. is Joseph R. Vadus of NOAA's Manned Undersea Science and Technology office.

The French team consists of Professor R. Vaissierre and Dr. C. Falconetti of the

University of Nice. The British will send representatives from the Admiralty Experimental Diving Unit as observers.

In addition to engineers and professional divers from the GKSS Co.—the German firm that supports "Helgoland"—Dr. Gerd Schriever and other scientists from the University of Kiel will participate.

Last summer U.S. scientists and engineers participated with the Germans in a one-week mission in "Helgoland" when it was located near the island of Helgoland in the North Sea. Sponsored by NOAA's Manned Undersea Science and Technology office, the mission provided familiarization with cold water technology and diving physiology. During March 1974 a team of German scientists from the University of Kiel, University of Bochum, and GKSS participated in a one-week mission in the NOAA-leased facility Hydro-Lab in the Bahamas to become familiar with the habitat technology and operations and to conduct surveys of marine life in tropical waters.

Marine Petroleum and Minerals Advisory Committee Members Named

(Continued from page 1)

President, Exxon Corporation, U.S.A., New York, N.Y. Dr. Barrow has an extensive background in geology and in the petroleum industry, particularly in the exploration field. A member of the National Advisory Committee on the Oceans and Atmosphere since January 1974, he resides in Greenwich, Conn.

—Herbert Brand, President of the Transportation Institute, Washington, D.C. Mr. Brand has extensive national and international experience in the maritime industry and was associated with the Seafarers International Union of North America for 21 years prior to 1967. He is a resident of Fairlawn, N.J.

—Dr. Dayton Clewell, Senior Vice President for Research and Engineering of the Mobil Oil Corporation, New York, N.Y. Dr. Clewell, a physicist, has served in numerous responsible positions in research and engineering in the petroleum industry. A former member of NACOA, he has also been active with committees of the National Security-Industrial Association and American Petroleum Institute. He is a resident of Darien, Conn.

—Marne A. Dubs, Director of Ocean Resources, Kennecott Copper Corporation, New York, N.Y. Mr. Dubs has an extensive background in chemical engineering related to mineral extraction and production. He is leading an effort to recover manganese nodules from the sea floor and has considerable knowledge in related Law of the Sea affairs. He resides in New Canaan, Conn.

—John E. Flipse, President of Deepsea Ventures, Inc., Gloucester Point, Va. Mr. Flipse has an extensive education and background in naval architecture and marine engineering and is currently the president of a firm in the deep ocean mining field. He has been active in the Marine Technology Society, Society of

Naval Architects and Marine Engineers, and other professional organizations. He is a resident of Gloucester.

—Ben C. Gerwick, Jr., Professor of Civil Engineering at the University of California, Berkeley, Calif. Mr. Gerwick is an expert on offshore structures, particularly the types used in the marine petroleum industry, and is a consulting construction engineer with offices in San Francisco. He resides in Oakland, Calif.

—Leon Hess, Chairman of the Board of Directors and Executive Officer of the Amerada Hess Corporation, New York, N.Y. Mr. Hess has extensive experience with the Amerada Hess Corporation and the independent sector of the petroleum and chemical industry. He resides in New York City.

—Edward Hood, President and Chairman of the Board of Directors of the Shipbuilders Council of America, Washington, D.C. Mr. Hood has extensive experience in the shipbuilding industry and extensive knowledge of the industry. He resides in Washington.

—Thomas L. Kimball, Executive Vice President of the National Wildlife Federation, Washington, D.C. Mr. Kimball is a former state wildlife official and has been deeply involved in the conservation and protection of the environment and wildlife. He has been active with the National Wildlife Federation and has served on advisory boards of the Department of the Interior and the Department of Health, Education and Welfare. He resides in McLean, Va.

—Betty N. MacDonald of Madison, Wis. Mrs. MacDonald has been active with the League of Women Voters of Wisconsin, serving as its Water Resources and Environmental Chairman, and is currently the coordinator of a Department of Justice-sponsored law enforcement education program at the University of Wisconsin. She has served on numerous committees and

task forces at the state level which were concerned with resources and the environment.

—Robert Mauermann, Executive Secretary of the Texas Shrimp Association, Brownsville, Tex. Mr. Mauermann served with the Texas Parks and Wildlife Service for 33 years, retiring as its Executive Director, and currently represents an important fishery in an area subjected to intensive marine petroleum development. He also has knowledge of Law of the Sea affairs through membership in the Department of State's Law of the Sea Advisory Committee. Mr. Mauermann resides in Brownsville.

—Cecil J. Olmstead, Vice President of TEXACO, Inc., New York, N.Y. Mr. Olmstead has an education in law and extensive experience in the petroleum industry and related Law of the Sea affairs. He resides in Westport, Conn.

—Melvin N.A. Peterson, Principal Investigator and Project Manager of the Deep Sea Drilling Project, Scripps Institution of Oceanography, LaJolla, Calif. The Deep Sea Drilling Project is a major research project with significant applications in non-living marine resources which has received widespread recognition. He resides in Del Mar, Calif.

—John G. Winger, Vice President-Energy Economics Division of the Chase Manhattan Bank, New York, N.Y. Mr. Winger has experience as a petroleum economist with the industry and extensive experience with the petroleum oriented sector of the banking industry. He has authored several economic and financial studies and is a member of various professional organizations associated with the petroleum industry. He resides in Chatham, N.J.

—Robert B. Ziegler, Vice President of the IHC Holland Dredging Division, Mystic, Conn. Mr. Ziegler has extensive experience and background in the dredging in-

Acheson Named NMFS' Social Anthropologist

Dr. James M. Acheson has been named to the post of Social Anthropologist in the Fisheries Management Division of the National Marine Fisheries Service's Office of Resource Management. He will concentrate on assessing the social and economic impact of various management schemes on American fishing communities; develop and recommend mechanisms designed to interject fishermen's views into proposed management schemes; and explore social science data needs required to effectively implement fisheries management plans.

Dr. Acheson previously was Associate Professor of Anthropology at the University of Maine, and has taught in the Department of Anthropology at the University of Colorado. He has done two years' field research among the Tarascan Indians of Western Mexico, concentrating on social and cultural factors connected to economic change. For the past three years he has been working in lobstering communities along the central Maine coast and has published a series of articles concerning territoriality among lobstermen and its economic and ecological effects. He is currently working on a book concerning lobstering communities.

Dr. Acheson received his B.A. from Colby College, and his Ph.D. in Anthropology from the University of Rochester.

dustry and with the related construction industry. He has also been affiliated with the oil transportation industry and cement industry. He resides in Mystic.

Several additional appointments are anticipated prior to the Committee's first meetings. The additional members will be selected to complement the industrial interests and to reflect other interests, such as consumers, law, and land-coastal use.

NWS Readies Tests of "Weather Office of the Future"

The National Weather Service is about to begin tests of a "weather office of the future."

The new, experimental facility is located at Weather Service Headquarters, Washington, D.C., and features a high-speed data-handling system geared to an on-site minicomputer and to display of weather information on TV screens instead of on paper.

This experimental facility is the first step toward applying modern automation technology to Weather

Service field operations in a comprehensive way. Essentially all electronic, it points the way toward solution of the communications lags that now so often frustrate weather forecasters. When fully implemented, the new system will speed delivery of storm and flood warnings to people making critical, split-second decisions involving lives and property.

Also, it will relieve forecasters of much of the drudgery they face now, while at the same time enabling them to provide a greatly expanded and im-

proved weather service at no increase in manpower.

During coming months, the facility will undergo a variety of tests, and be used for demonstrations and training. The experimental unit is the forerunner of a complex, long-range program dubbed AFOS (for Automation of Field Operations and Services). AFOS calls for about 275 Weather Service offices around the country to be similarly automated by 1980, at a cost of 40 million dollars. When completed, the system will be one of the

largest computer network operated by the Federal Government.

Key elements in the system will be the minicomputers and TV-type displays. Each participating office will have its own minicomputer to collect, process, and communicate data, and a set of TV screens controlled by a typewriterlike keyboard message composition display. The screens will substitute for the present teletypewriter and facsimile machines and the massive quantities of paper they generate.



TOMORROW'S WEATHERMAN will use an all-electronic system for preparing daily forecasts and issuing storm warnings. Computerized data-handling with TV-type displays will greatly speed

the job. Here, Meteorologist Dean Costantinou tries out new forecaster's console in experimental automated facility at Weather Service Headquarters.

Courses in Oceanic Educational Program To Be Held at NOAA Headquarters

The NOAA-sponsored Oceanic Educational Program will provide two courses this fall at the Washington Science Center in Building 5, Rockville, Md., under the aegis of the University of Virginia. The courses can be taken for graduate credit or students may enroll as auditors on a non-credit basis.

The courses are similar to those given last fall: The Humanities of the Sea (GSES 552) and Seminar on Oceanic Policy (GSES

556A). NOAA employees enrolling in either course should submit a NOAA Form 53-1, which should be forwarded through channels to the NOAA Employee Development Section (AD-416) to arrive by September 13. Employees unable to meet this deadline, enrolling without NOAA sponsorship, or in need of additional information should call Daniel E. Bella at 496-8481 or 8045. Each class will consist of 15 sessions beginning September 16 and ending January 13. For exact times, consult Mr. Bella. Classes will be held on Monday evenings.

The courses will focus on man and the World Ocean through the full spectrum of oceanic endeavor encom-

passing the humanities and related policies.

Gilven M. Slonim, Executive Vice President of the Oceanic Educational Foundation, which cosponsors the courses, directs the program for the University of Virginia. Mr. Slonim has had extensive experience at sea, in strategic planning and in the teaching of oceanic education.

A number of guest speakers who are nationally known experts, scholars and pioneers in the field will lecture at the "Humanities of the Sea" course. Topics such as history, economics, politics and the full spectrum of oceanic and environmental factors of the oceans will be covered in both seminar sessions and lectures.

The "Seminar on Oceanic Policy" will be presided over by Mr. Slonim. It will explore the elements of national policy pertaining to the World Ocean which requires formulation to enable the fullest utilization of American enterprise toward full realization of the potential for the solution of critical national problems, the fulfillment of human needs and the enhancement of the national welfare.

Classes will be limited to insure group discussion and employees who enroll will be accepted on a first-come, first-served basis.

The tuition for each course is \$72 plus \$5 for persons enrolling with the University of Virginia for the first time.



National Oceanic and Atmospheric Administration

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