



noaa week

Volume 4 Number 35

National Climatic Center August 17, 1973

NWS Developing Prototype "Weather Office of the Future"

Robert W. Knecht Named To Head Office of Coastal Environment

Robert W. Knecht has been sworn in as Director of the Office of Coastal Environment. He has served as Acting Director of the office since its establishment in May. The Office of Coastal Environment was formed to manage NOAA's responsibilities under the Coastal Zone Management Act of 1972, the Marine Protection, Research and Sanctuaries Act of 1972 (the Ocean Dumping Act), and related activities. Operating under NOAA's Associate Administrator for Marine Resources, OCE presently consists of the Coastal Zone Management Program, Marine Eco-Systems Analysis (MESA) Program, and Manned Undersea Science and Technology (MUS&T) Program.

"America's coastal areas are immensely productive, often ecologically fragile and much sought after for recreational activities," Mr. Knecht said. "Our aim is to help ensure their continued health, beauty, and productivity for our benefit. Our mission is to encourage and assist the States and other interested groups in the rational planning and coordinated management of these vital but often-neglected areas."

The Office of Coastal Environment will concentrate its activities in four major kinds of activities:

- Encouraging and assisting State, regional, and local government units in developing and operating coastal zone management programs;

(Continued on page 4)



After being sworn in, Mr. Knecht (left) is congratulated by Dr. Robert M. White, NOAA Administrator. In the center is Ralph C. Reeder, NOAA's new Personnel Director.

The National Weather Service is developing a prototype "weather office of the future," which will be the first step toward applying modern automation technology to Weather Service field operations in a comprehensive way.

A \$638,000 contract for developing the model weather office has been awarded to Garland Division of E-Systems, Inc., Garland, Texas. Slated for completion by July 1, 1974, the prototype facility will be the forerunner of a complex, long-range program, dubbed AFOS (for Automation of Field Operations and Services), whose goal is to employ modern machinery, especially on-site computers and TV-type display devices, to provide maximum assistance to the forecaster, hydrologist, weather service specialist and observer.

The model weather office will be located at Weather Service central headquarters near Washington, D.C., where it will be used for experimentation, demonstration, and training. Lessons learned will be applied to an eventual network of 52 modernized Weather Service Forecast Offices, nationwide. These will be electronically linked with each other and with 12 regional River Forecast Centers, the National Meteorological Center, the National Severe Storms Forecast Center, National Hurricane Center, and National Climatic Center. The linking circuit will be a full-duplex communications line of telephone quality, called the National Digital Circuit.

Key elements in the system will be minicomputers and TV-type displays. Each participating office will have its own minicomputer to help collect data, process it, display it, communicate it, and disseminate it. The AFOS program contrasts sharply with previous trends in computerized data-handling in that it decentralizes the process rather than centralizing it. The minicomputer--a relatively recent engineering achievement--makes this possible.

Each Weather Service Forecast Office--by means of its minicomputer--will act as the collection point for all data acquired within its area. It will store the data locally, and pass information along to other Forecast Offices and the various regional and national weather centers via the National Digital Circuit. (A digital circuit is required for "talk" between computers.)

This rapid but dispersed data-handling system will also permit each office with a minicomputer to act as a field disseminating point for Weather Service forecasts, warnings, and other information originating

(Continued on page 5)

Financing for Fishing Vessels Is Simplified by New Law

Certain provisions of the new Federal Ship Financing Act of 1972 are of particular interest to the fishing industry and those who finance fishing vessels, according to the National Marine Fisheries Service.

The Act simplifies paper work, liberalizes refinancing, and makes the program more attractive to lenders who finance commercial fishing vessels. Lenders participating in the new program will no longer have to secure their loans by vessel mortgages or other collateral. The lender will be protected by a U.S. Government guarantee of the obligation. The Government and the borrower will then make security arrangements without the lender's involvement.

Among other things, the Act provides for a Fishing Vessel Obligation Guarantee Program to be administered by the National Marine Fisheries Service. The new program is designed to increase private financial responsiveness to the investment capital needs of the U.S. commercial fishing fleet.

By guaranteeing obligations such as notes, bonds, debentures, or other forms of indebtedness, the new program assures lenders that they will be repaid as agreed when they make loans to commercial fishermen to help finance or refinance up to 75 percent of the cost of constructing, reconstructing, or reconditioning commercial fishing vessels.

According to NMFS Associate Director Joseph W. Slavin, the new program supersedes the old Fishing Vessel Mortgage and Loan Insurance program and can be used in conjunction with the NMFS administered Capital Construction Fund program.

Requests for further information and comments may be addressed to the Financial Assistance Division, National Marine Fisheries Service, Washington, D.C. 20235 (Telephone 202-343-8893).

Mr. Slavin said that all comments will be carefully evaluated before the rules are finalized, and that any questions concerning the new programs may be addressed to the National Marine Fisheries Service.

Year-Long Survey in Georgia Completed

A 12-month, 3400-square-mile geodetic survey has been conducted in southwestern Georgia by a National Geodetic Survey field party headed by Ivan L. Crabbe.

The survey, estimated to cost \$150,000, was carried out in the area from Columbus to the Florida state line. It is part of a long-range cooperative program of the National Geodetic Survey and Georgia. The program, which has been underway since November 1971, is designed to provide geographic positions of latitude and longitude throughout the state.

The party determined over 75 geographic positions in the counties of Chattahoochee, Marion, Schley, Stewart, Webster, Sumter, Randolph, Terrell, Lee, Calhoun, Dougherty, Early, Baker, Mitchell, Miller, Decatur, Grady and Thomas and the communities of Buena Vista, Richland, Americus, Dawson, Albany, Camilla, Pelham and Thomasville.

Rear Admiral Herbert R. Lippold, Jr., Now Directs Pacific Marine Center



Rear Admiral Herbert R. Lippold, Jr. (right), was sworn in as Director of the National Ocean Survey's Pacific Marine Center in Seattle, Wash., by NOS Director Rear Admiral Allen L. Powell. Mrs. Lippold is in the center. Admiral Lippold succeeded Rear Admiral N.E. Taylor, who retired.

NMFS Participates in Upward Bound Program

The La Jolla Laboratory of the National Marine Fisheries Service Southwest Fisheries Center is participating this summer in the Upward Bound Program funded through the U.S. Office of Education. The program exposes small groups of exceptional minority students to the science resources located in the San Diego, Calif., area. Throughout the summer, the students live at the nearby University of California, San Diego, from which they are taken to the facilities of the Naval Undersea Laboratory, Naval Electronics Laboratory, Naval Air Station, Scripps Institution of Oceanography, NMFS, and private industry installations.

At weekly intervals they go to the La Jolla Laboratory, where they are given a general explanation of fisheries research and of the work of the Center, shown a pertinent film on aspects of the on-going research, and a tour of the Center to provide exposure to the research and technical facilities.



Students participating in the Upward Bound Program observing Pacific Mackerel held for spawning experiments at the La Jolla Laboratory.

NWS Space Meteorology Group Continues Support of Skylab

The four staffs of the Spaceflight Meteorology Group in the National Weather Service Space Operations Support Division are continuing to work in support of the earth oriented Skylab experiments and the associated Earth Resources Aircraft Program flights.

According to Kenneth M. Nagler, Chief of the Division, on the basis of their forecasts, four passes across North America have been scheduled and carried out using the sensors in the Earth Resources Experiment Package. Close forecast support is given daily to three aircraft that carry similar sensors.

As a result of an alert passed on by the SMG staff at the Johnson Space Center, Houston (headed by Alan N. Sanderson, Chief of the SMG, and including Richard K. Siler, MIC of the Houston Section, and Roger K. Carter and Edward F. Mitros), the Skylab crew also observed and photographed tropical storm Glenda over the Eastern Pacific Ocean. Miami Section personnel--Norman W. Nixon and Mary A. Samet--are augmenting the staff in Houston to provide round-the-clock support.

Because of the possibility of an emergency return, the Honolulu Representative of the SMG, Oliver A. Gorden, Jr., with help from the Weather Service Forecast Office in Honolulu, prepares forecasts for from 9 to 15 target points each day. The forecast period for these preferred Mid-Pacific emergency landing points ranges from about 12 hours to about 6 days.

To cover the possibility of a landing in other parts of the world, Richard A. Brintzenhofe, MIC, and his staff at the Suitland Section--Bruce W. Brooks, James L. Cox, William P. Moore, and James T. Williams, Jr.--prepare daily forecast maps showing areas of acceptable and unacceptable weather. Another activity of the Suitland Section is that of providing worldwide cloud cover forecasts used in scheduling the times the sensors on the Earth Resources Technology Satellites are operated. The section is assisted in this activity by William P. Moore, Chief of Range Support Projects in the Space Operations Support Division.

At the Kennedy Space Center SMG Section, Jesse R. Gulick, the new MIC, who was formerly the MIC of the Miami Section, and his staff--James R. Nicholson, Richard L. Urbanak, Carl P. Johnson, and Sarah F. Greenfield--are involved with local weather forecasts for the possible rescue mission.

Although the Skylab "rescue vehicle" was not moved to the launch pad until August 14, round-the-clock activities in preparation for the move put an added burden on the SMG staff there. For example, the doors of the Vehicle Assembly Building were left open (for ventilation) unless showers were expected. The staff operated two shifts each day, but extended the work day whenever there was a threat of showers.

**Take Stock In America
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Joseph R. Blum Is Appointed NMFS Marine Mammal Coordinator

Joseph R. Blum has been appointed Marine Mammal Coordinator in the National Marine Fisheries Service. His most recent assignment was as Deputy Commissioner of the Alaska Department of Fish and Game in Juneau. Prior to that he served in various positions of increasing responsibility in that agency. He has represented Alaska on a number of State and State-Federal groups working on fish and game problems, particularly on reducing State-Federal conflicts and overlap. Another of his assignments in Alaska dealt with marine mammal habitat with a goal of minimizing or eliminating hazards to marine mammals.

The Fisheries Service's responsibilities were greatly expanded by passage of the Marine Mammal Protection Act of 1972 when the Service was assigned the management, enforcement, and administrative functions of that portion of the legislation that deals with seals, sea lions, whales, and porpoises.

Mr. Blum received his B.S. degree in biology in 1963 from Santa Clara University, Santa Clara, Calif., and also did graduate work at San Jose State College, San Jose, Calif.

Lieutenant Commander David M. Wilson Named Field Procedures Officer at AMC

Lieutenant Commander David M. Wilson is the new Field Procedures Officer at the Atlantic Marine Center in Norfolk, Va. The NOAA commissioned officer joined the Corps in 1966. He has served aboard various NOAA ships and with the National Geodetic Survey in Corbin, Va.

Joseph Schanta Receives Bronze Medal



Joseph Schanta (right), Chief of the Lake Survey Center Reproduction Branch, has received a Commerce Department Bronze Medal "in recognition of many years of outstanding achievement and service with the Lake Survey Center." LSC Director, Captain Kenneth A. MacDonald, presented the award.

New York Survey Data To Affect International Great Lakes Datum

A 400-mile geodetic survey of ground elevations is being conducted from the Canadian border to Metropolitan New York by the National Geodetic Survey at an estimated cost of \$174,000.

A 16-man field party, headed by Robert R. Gerrish, will carry out the five-month survey, measuring over 400 elevations along the route as part of a long-range program to update the agency's national network of elevations.

The survey route extends through the communities of St. Regis, Malone, Ellenburg, Rouses Point, Plattsburgh, Westport, Ticonderoga, Whitehall, Hudson Falls, Saratoga Springs, Mechanicville, Troy, Albany, Hudson, Poughkeepsie, Beacon, Peekskill and Ossining to Yonkers.

The survey between Rouses Point, New York, and Cornwall, Ontario, will contribute to the leveling required to complete the re-evaluation of the International Great Lakes Datum, a special network that provides elevations needed for charting, construction and other purposes relating to the water levels of the Great Lakes system as well as to the National Vertical Network. The Lake Survey Center has the responsibility for establishing and maintaining elevations along the U. S. side in coordination with Canadian agencies.

AOML Building Contractor Honored



Lieutenant C.E. Ferguson (USN) (right) of the Naval Facilities Engineering Command awarded a Navy Certificate of Appreciation to Ronald Shafer (center), President of Shafer and Miller, General Contractors for the new facility built in Miami, Fla., for the Environmental Research Laboratories' Atlantic Oceanographic and Meteorological Laboratories. Dr. Harris B. Stewart, Jr., (left) Director of AOML, added appreciation on behalf of NOAA.

NWS Golf Tournament Scheduled

The third annual National Weather Service Golf Tournament will be held on October 25, 26, and 27, this year at the Broadwater Beach Hotel in Biloxi, Miss. Closing dates for entries will be September 15. Entry fee is \$10 per golfer. For information, contact the Meteorologist-in-Charge, at the Weather Service Office in Mobile, Ala.

Lucille V. Frame Receives Commerce Bronze Medal



Lucille V. Frame, Secretary to the Assistant Regional Director for Administration in the National Marine Fisheries Service's Southeast Region, has received a Commerce Bronze Medal "in recognition of sustained superior performance of administrative and secretarial duties." The medal was presented to Mrs. Frame by Regional Director Jack W. Gehringer at the Southeast Regional Staff Conference in St. Petersburg, Fla.

Robert W. Knecht (Continued from page 1)

--Supporting development of scientific information needed to assess and predict the impact of manmade alterations or natural phenomena on marine areas, as required for effective coastal zone management;

--Serving as focal point for coordination with and assistance to government, public, industrial, academic, and other institutions concerned with coastal zone management;

--Providing a focus for civilian manned undersea activities in our coastal waters in support of NOAA research programs and other government requirements.

Mr. Knecht, formerly the Deputy Director of the Environmental Research Laboratories in Boulder, Colo., came to the Washington area in 1972 to head the Coastal Zone Management Task Force. He has been in government service in the Department of Commerce since 1949 as a research physicist in the National Bureau of Standards and later in the Environmental Science Services Administration and in NOAA.

Mr. Knecht served nine years on the Boulder City Council and was in his third term as mayor of the city when he resigned in 1971 to do graduate study in the Master of Marine Affairs Program at the University of Rhode Island. He also served two terms as Chairman of the Denver Regional Council of Governments and was active in the Colorado Municipal League. From 1968-1970, Mr. Knecht served as Chairman of the National League of Cities Committee on Environmental Quality.

notes about people

Evelyn J. Fields, a cartographic technician at the National Ocean Survey's Atlantic Marine Center in Norfolk, Va., has completed a month's on-the-job training in hydrographic



field operations, the first minority employee to receive this type of training. The training was received aboard High Speed Launch 746, which is based at Ponce de Leon, Fla., while

it is conducting hydrographic surveys off Georgia and Florida. In AMC's Processing Division, Miss Fields checks all field data for accuracy and completeness before final plotting on a nautical chart. She is a native of Norfolk, with a baccalaureate degree from Norfolk State College.

Dr. Donald J. Williams, Director of the Environmental Research Laboratories' Space Environment Laboratory in Boulder, Colo., has been invited to be the key speaker at the Bicentennial Festival in his home town, Jaffrey, N.H. Jaffrey, a small manufacturing town in the Monadnock region of southern New Hampshire, was incorporated on August 17, 1773. Dr. Williams, a native son, will be presenting the keynote address on August 18, 1973.



Charles M. Fuss, Jr. (right), Regional Enforcement Supervisor of the National Marine Fisheries Service Southeast Region, was congratulated upon completion of courses at the Criminal Investigation School of the U. S. Treasury Department in Washington, D.C., by NMFS Director Robert W. Schoning. Mr. Fuss finished second highest in the class of 40.

NAMFAX Circuit Is Completed And Extended Into Mexico, Canada

The National Weather Service NAMFAX circuit, which carries the charts of the National Facsimile Network (NAFAX) and those of the Aviation Meteorological Facsimile Network (AMFAX) has been completed and extended into Mexico and Canada. The NAMFAX is a dual speed circuit that transmits the weather facsimile charts at 240 scans per minute and satellite charts at 120 scans per minute.

Within a short time, all AMFAX installations will be removed, as well as the NAFAX installations in those locations presently having both NAFAX and AMFAX. (NAFAX will remain in those locations where it is the only circuit installed.)

NAMFAX represents a considerable saving in money because it replaces two systems with one system in all of the locations which previously had both AMFAX and NAFAX.

According to John C. Straiton, Chief of the Communications Division, both Canada and Mexico have indicated satisfaction with the signals they receive from the new circuit.

The circuit goes to the international border crossing point at Laredo, Tex., from which the facsimile signals go by Mexican telephone facilities to the Mexican meteorological service in Mexico City. From the international border crossing point at Mooers Forks, N.Y., the transmissions go to the Canadian Meteorological Center in Montreal.

The AMFAX circuit to Anchorage, Alaska, is scheduled to be upgraded to NAMFAX by October 5, when transmissions will go to the NWS Alaska Region via the international border crossing point at Port Angeles, Wash.

The Communications Division's Facilities and Schedules Branch, which is headed by Harry A. Miller and which manages the facsimile circuits, has been in charge of implementing the new system. Joseph H. Des Roches, Communications Management Specialist, has visited most of the domestic NWS stations where the NAMFAX circuit has been installed to train the electronic technicians in the operation of the equipment and acquaint the meteorologists with the philosophy of the circuit. Anthony J. Veith, Communications Specialist, has been the point of contact for the forthcoming implementation of NAMFAX in Alaska.

Prototype Weather Office (Continued from page 1)

anywhere within the AFOS network. Forecasters at any location in the system will be able to call for information from any other location and receive an answer within seconds.

Besides the basic minicomputer, with its own built-in memory, each location will have tapes and discs for added data storage. Each location will have one or several display consoles with keyboards similar to a typewriter's for calling up information in the memory bank for display on the TV-like screens. The information on the screens may be graphic (maps or photos) or alphanumeric (printed words or numbers). There also will be a hard-copy device for reproducing on paper any image in the data bank.

Current plans call for completion of the entire system within six to eight years.

length of service

Employees of the National Marine Fisheries Service Pacific Fishery Products Technology Center in Seattle, Wash., who received Length of Service Awards in April were: 25 years - Max PATASHNIK. 20 years - Dr. Maynard A. STEINBERG.

Marion L. MYER, at the Northwest Administrative Service Office in Seattle, Wash., received a 25-year Length of Service Award in April.

Robert T.B. IVERSEN, of the National Marine Fisheries Service Southwest Region received a 20-year Length of Service Award in March.

Aboard the NOAA Ship Rainier in February, Harvey C. NACUA received a 25-year Length of Service Award.



In a ceremony aboard the NOAA Ship Rainier in April, Length of Service Awards were presented to (from left) Juan F. TAGALECOD, 25 years; Charles J. FROST, 25 years; Louis A. PINTER, 35 years; and Stanley E. LINN, 25 years, by Captain Gerard E. Haraden, Commanding Officer of the ship.

National Weather Service Southern Region employees who received Length of Service Awards in April were: 30 years - Robert E. HELBUSH, WSRH Ft. Worth, Tex.; John A. RILEY, Jr., WSRH Ft. Worth, Tex.; and Oliver H. NEWTON, WSO/AG Lubbock, Tex. 25 years - Bernard E. MILON, NHC Miami, Fla. 20 years - Robert N. LACEY, WSFO Atlanta, Ga.; William E. HORD, WSO Abilene, Tex.; John E. ASHURST, WSO Bristol, Tenn.; Cruz A. MORENO, WSFO San Juan, P.R.; and Eldon S. YOUNG, WSFO New Orleans, La.

National Weather Service Central Region employees who received Length of Service Awards in April were: 35 years - Harvey A. BOYLES, WSO Rapid City, S.Dak.; and Carl H. LINDAHL, WSFO Minneapolis, Minn. 30 years - James N. BAGNELL, WSO LaCrosse, Wis.; Warren C. CALDWELL, WSFO Des Moines, Iowa; William R. CHASSEE, WSO Grand Rapids, Mich.; Hilmer A. CRUMRINE, NSSFC, Kansas City, Mo.; Robert E. FENNELL, WSO Huron, S.Dak.; and Pearl WENDT, WSO Williston, N.Dak. 25 years - Henry A. KYLE, WSO Springfield, Mo.; and Paul L. ODELL, WSO Topeka, Kans. 20 years - Robert G. BEEBE, CRH Kansas City, Mo.; Richard D. DOUGHERTY, WSMO Monett, Mo.; Arthur C. HETZKE, WSO North Platte, Nebr.; Ralph W. OLINGER, WSO Columbia, Mo.; and Johnny S. SMITH, NSSFC, Kansas City, Mo.



In April, Length of Service Awards were presented at the National Marine Fisheries Service Northwest Fisheries Center in Seattle, Wash., to (from left) Harold GANGMARK and Edith WELLS, 30 years; and Richard FOUST, Clement ZIPP, and Thaddeus DEMBSKI, 25 years.

National Weather Service Eastern Region employees who received Length of Service Awards in April were: 30 years - William H. MILLER, WSO Greensboro, N.C.; Lloyd B. SEIDEL, WSO/C Columbus, Ohio; Alma WORTH, WSO New York, N.Y.; Leroy H. RHINE, Jr., WSO Harrisburg, Pa.; Walter D. WOLFE, WSO Asheville, N.C.; Robert A. DITTMAR, WSSF Wallops Island, Va.; David L. COVENEY, ERH Nicholas TUSACK, WSO Newark, N.J.; Milton N. WERBIN, WSO New York, N.Y.; Amerigo D. LiLAURO, WSO Rochester, N.Y.; Wayne A. SMITH, RFC Hartford, Conn.; Melchor D. PERDIDO, WSFO New York, N.Y.; Arthur B. BASKIN, Jr., WSFO Columbia, S.C.; Albert J. BEATRICE, WSO Rochester, N.Y.; Eugene R. ACE, WSFO New York, N.Y.; and Philip V. NADEAU, WSFO Portland, Maine. 25 years - Max R. CAGLE, WSO Cape Hatteras, N.C.; and William E. HILLIG, WSFO Buffalo, N.Y. 20 years - Wilfred V. COX, WSO Cincinnati, Ohio.



Thirty-year Length of Service Awards were presented at the Environmental Data Service's National Climatic Center in Asheville, N.C., in March to (from left) William M. McMURRAY, James T. BURGIN, Evelyn M. MEADOWS, William P. NASH, Betty S. HIMBERGER, Roosevelt VINSON, Edrie S. MCCARTHY, Wilson R. TSCHIFFELLA, and Feaster SIMMONS.

William M. COOK, of the National Ocean Survey National Geodetic Survey Operations Center Party G-16, received a Length of Service Award for 20 years' service.

National Weather Service Alaska Region employees who received Length of Service Awards in April were: 30 years - James CROCKETT. 25 years - James BOUDREAU.

NOAA, NWS, NAGE Officials Hold National Consultations



NOAA and National Weather Service officials met recently with National Association of Government Employees officials for national consultations. Participants were (seated, from left) Jim Whelan, NWS Eastern Region Personnel Division; Alan Whitney, NAGE National Executive Director; Jim Huntoon, Chief, Manpower Utilization Staff, NWS; Richard Wiggers, Chief, Equipment Maintenance Standards Branch, NWS; Leo Harrison, NAGE Eastern Region; (standing from left) Earl Leonard, NAGE Western Region; Charles Bradham, NAGE Southern Region; Andrew Busser, Chief, NWS Personnel Section; Frank Pierce, NAGE Southern Region; Harvey Teyler, NAGE Central Region; Gerald Petersen, Chief, Public Weather Branch, NWS; Carlos Garza, NAGE Southern Region, and Tony Blake, NOAA Personnel Division.

Length of Service (Continued from page 6)

National Weather Service Pacific Region employees who received Length of Service Awards in April were: 30 years - John W. FENTON, WSFO Honolulu; 25 years - Howard R. TATUM, WSO Hilo; and Kitami NAMBA, PRH.

National Marine Fisheries Service Southwest Fisheries Center employees who received Length of Service Awards last spring were: 25 years - John MacGREGOR. 20 years - Makoto KIMURA.

NOAA Headquarters employees who received Length of Service Awards in April were: 40 years - Jack B. WHITCOMB. 35 years - George E. MOORE. 30 years - Emma L. B. SAADOWSKI, Harry MORDHORST, Alexander F. ROBBINS, Wendell K. SHOUN, and Mildred V. Ruth HUNLEY, James Clarence ROLAND, Ardo X. MEYER, Wellington WATERS, and Lorry M. NAKATUS. 20 years - Nancy L. CLARK, Claude W. WESSELLS, Jr., William L. DOONAN, Richard S. BROEKSTRA, Jr., John P. WEBBER, James H. LUCAS, Jr., Helen L. GODDARD, Jeannie G. GARDNER, Betty J. H. SHUMAKER, and Jesse C. WATKINS.

National Weather Service Western Region employees who received Length of Service Awards in April were: 30 years - Clayton K. CALL, WSO Santa Maria, Calif.; Mary Jane CRYSTAL, WRH, Salt Lake City, Utah; Woodrow W. DICKEY, WRH, Salt Lake City, Utah; Paul T. ELLIS, WSFO Portland, Oreg.; Thomas A. HILL, Jr., WSFO Portland, Oreg.; Dorothy I. MYERS, WSO Seattle, Wash.; Gerald D. OWENS, WSO Long Beach, Calif., and Roy L. PHILLIPS, WSO Yakima, Wash.; and Maxwell K. STRUTZ, WSFO Portland, Oreg. 25 years - Dwight BAERTSCH, WRH, Salt Lake City, Utah; and Frank E. JOHNSON, WSO Oakland, Calif.; 20 years - George W. OVERHALSER, WSO Portland, Oreg.

St. Lawrence River Area Charts Revised

Michael C. Holmes, Teddy D. Kuchciak, Edward J. Vilenski, James C. Quist, Paul Koromos, George A. Jedry, Jerry M. Nahas and Dennis Tamburo of the Lake Survey Center have completed revisions to 15 charts of the St. Lawrence River area in conjunction with their counterpart Canadian Hydrographic Services personnel. The area covered extended from Massena to Cape Vincent, New York. Each party surveyed its own national section and pertinent data were exchanged so that all charts of the area will be compatible.

Oregon II Holds Open House For Fishermen's Group



Harvey R. Bullis, Jr. (right), Director of the National Marine Fisheries Service Southeast Fisheries Center, explains fishing techniques used aboard scientific research vessels to "Blue" Fulford (center, with tie), Secretary of the Organized Fishermen of Florida, and other visitors during the recent Open House for OFF held by the NOAA Ship Oregon II at Cape Canaveral.

recipe of the week



TUNA-CUSTARD PIE WITH CHEESE SAUCE

2 cans (6-1/2 or 7 ounces each) tuna
 1/2 cup chopped onion
 2 tablespoons margarine or cooking oil
 2 tablespoons flour
 1/2 teaspoon salt
 Dash pepper
 1-1/2 cups undiluted, evaporated milk
 2 eggs, beaten
 9-inch unbaked pastry shell
 Cheese Sauce (recipe follows)
 Tomato slices (optional)

Drain and flake tuna. Cook onion in margarine or cooking oil until tender, but not brown. Stir in flour, salt, and pepper. Add milk; cook, stirring constantly, until thickened. Pour mixture over eggs very slowly, beating constantly. Bake crust in moderate oven, 375° F., about 5 minutes. Remove crust from oven and spread tuna over crust; pour egg mixture over tuna. Return pie to oven; bake about 25 to 30 minutes or until filling is set. Let stand about 10 minutes before cutting into wedges. Serve with Cheese Sauce. Garnish with thin tomato slices, if desired. Makes one 9-inch pie, 4 to 6 servings.

Cheese Sauce

1 can (10-3/4 ounce) condensed Cheddar cheese soup
 1/2 cup undiluted, evaporated milk

Combine soup and milk in saucepan; heat, stirring until hot and smooth. Makes about 1-3/4 cups sauce.

calendar of events

- Through Sept. 16
 Woods Hole, Mass.
 NOAA's Aquarium at the Woods Hole, Mass., Laboratory of the National Marine Fisheries Service is open to the public every day from 10 a.m. to 5 p.m.
 (C. L. Wheeler, 607-548-7684)
- Sept. 10-12
 Washington, D.C.
 "Marine Industries: Problems and Opportunities," Ninth Annual Conference and Exposition of the Marine Technology Society. (R.W. Niblock, MTS, 1730 M St., N.W., Washington, D.C. 20036. 202-659-3251)
- Sept. 10-12
 Orlando, Fla.
 International Association of Game, Fish and Conservation Commissioners Meeting. (John S. Gottschalk, IAGFCC, 1709 New York Ave., N.W., Washington, D.C. 20006. 202-872-8866)
- Sept. 11-13
 Washington, D.C.
 Special open sessions of ISO-USA-1973, ninth triennial meeting of the International Organization for Standardization. Open session topics are metric conversion, impact of international standards on world trade, occupational safety and health, standards for the environment, and references to standards in regulations. No admission, but reservations must be made. (For session dates, times, and reservations, contact Dean Maskevich, Public Relations, American National Standards Institute, 1430 Broadway, New York, N.Y. 10018. 212-868-1220. Programs may be picked up at Room 509 Washington Building, 15th & New York Ave., Washington, D.C.)
- Sept. 12-15
 Orlando, Fla.
 American Fisheries Society Meeting. (R. A. Wade, AFS, 1319 18th St., N.W., Washington, D. C. 20036. 202-872-8282)
- Sept. 13-14
 Kansas City, Mo.
 Annual Intra-National Weather Service Severe Local Storms Conference. (F.E. Wells, Code W117, National Weather Service, 8060 13th St., Silver Spring, Md. 20910. 301-427-7679)
- Sept. 25-28
 Seattle, Wash.
 "Ocean '73," Fourth annual International Conference on Engineering in the Ocean Environment, sponsored by the Institute of Electrical and Electronic Engineers, Inc. (E.W. Early, Co-Chairman, Ocean '73, University of Washington, Applied Physics Laboratory, 1013 N.E. 40th St., Seattle, Wash. 98195. 206-543-1300)

Items to be considered for publication in NOAA WEEK should be submitted to:
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National Oceanic and Atmospheric Administration

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