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

Dr. Machta Develops Model Of Carbon Dioxide Exchange

A model of the exchange of carbon dioxide between the atmosphere, the oceans, and plant and animal life has been developed by Dr. Lester Machta, who heads the Environmental Research Laboratories' Air Resources Laboratories.

The model, together with estimates of man's future production of carbon dioxide through the burning of coal, oil, and natural gas, makes it possible to predict the atmosphere's carbon dioxide content

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NFFE Agreement Is Negotiated For NMFS Seattle Area Employees



A union agreement recently was negotiated for the Director, Northwest Region, National Marine Fisheries Service, and Director, Northwest Fisheries Center, with the National Federation of Federal Employees Local #8 in Seattle, Wash. F.W. Hubbard, Northwest Administrative Service Office, was the chief negotiator.

Shown at the signing ceremony, are: (first row, from left) Gordon D. Shadoan, Chief, Personnel Division, NASO; Donald R. Johnson, Director, NW Region, NMFS; Francis Mithoug, President, Local #8. (Second row, from left) Herbert H. Shippen, Member Local #8 Negotiating Team; Leona Allison, Treasurer, Local #8; Richard K. Bakkala, Trustee, Local #8; and Jack Patton, Director, NASO.

Hurricane Season Is Here, NWS Reminds Us Again

The National Weather Service has launched its yearly campaign to remind people of the special hazard hurricanes represent. By the official calendar, the hurricane season runs from June 1 to November 30. Most of the fierce tropical cyclones, with winds of 74 to 150 miles per hour or more, strike U.S. coastal areas in August, September, and October. They are a threat primarily to the gulf coast and eastern seaboard.

The National Hurricane Center in Miami, Fla., directed by Dr. Robert H. Simpson, again will be coordinating a farflung and sophisticated array of storm spotters, trackers, and forecasters. The basic goal will be to give at least 12 hours of daylight warning time before a hurricane hits an area.

Satellites, aircraft, and radar will keep suspicious-looking or threatening tropical cyclones under surveillance long before they make landfall.

This year, the hurricane-hunting fleet will consist of nine Air Force WC-130 Hercules, operating out of Ramey Air Force Base, Puerto Rico; four Navy WP-3A Orions replacing the C-121 Super Constellations of past years, operating from Jacksonville, Fla.; and four Miami, Fla.,-based NOAA RFF aircraft--two DC-6's, one WC-130 Hercules, and a high-flying WB-57, which can cruise above 40,000 feet.

Recently improved weather-measuring instruments of the hurricane-hunting planes will help storm trackers pinpoint more closely the exact center of the pinwheel-shaped storms and thus sharpen forecasters' ability to predict where a hurricane is heading.

When within about 250 miles of the coast, hurricanes move into range of a "picket line" of 17 coastal radars, which give better idea of where a storm is heading and tell during the crucial hours before landfall whether the storm is expanding or contracting. This information, when coupled with aircraft measurements of forces inside the storm, provides a vital profile of its disaster potential.

As the hurricane churns over the relatively shallow waters of the continental shelf, another vital forecasting aid is

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Dr. Robert M. White Addresses 40th NOAA Officer Training Class



The above photo was taken at the NOAA Officer Training Center U.S. Merchant Marine Academy, Kings Point, N.Y., when Dr. Robert M. White, NOAA Administrator, addressed the 40th NOAA Officer Training Class. Shown are (first row, from left) Dr. White, Lt. Sellers, Ens. Wert, Ens. Floyd, Ens. Tracy, Lt. Daniels (NOTC

Staff). (Second row, from left) Ens. Groeppler, Ens. Kissam, Ens. Arnold, Ens. Decker, Ens. Hendershot. (Third row, from left) Ens. Kessenich, Ens. Belden, Ens. Gloier, Ens. Blasingame, LCDR. Dropp (Officer in Charge, NOTC). (Fourth row, from left) Midshipman George l/c, Lt. (j.g.) Johnson (NOTC Staff), Ens. De Foor, Ens. Douglass.

Surveys Completed by NOS Geodetic and Photo Parties; Others Are Begun

Jerry Popiel's seven-man field party recently completed a five-month survey in Imperial Valley, Calif., to establish geodetic control for evaluating land subsidence which may occur if geothermal areas in the valley are tapped to generate electric power. The \$50,000 survey was carried out in cooperation with Imperial County and other Federal and state agencies to aid a proposed study of the use of underground hot steam and water for generating power and for providing additional water supplies for the valley.

Lieutenant John C. Albright's 20-man field party has just completed a 23-month geodetic survey of more than 6,500 square miles in northern Louisiana. The \$430,000 project, done in cooperation with the state, was needed because of rapidly rising land values and commercial and governmental requirements for planning and construction.

The 15-man field party headed by Robert R. Gerrish has completed a \$75,000, 200-mile geodetic survey in Victoria and Jackson Counties, Tex. The survey was undertaken two months ago for the Bureau of Reclamation to facilitate earth movement studies of the area for construction of a proposed dam and other engineering projects.

Harold L. Miller's 20-man field party recently completed a 12-month, \$280,000 geodetic survey to provide numerous geographic positions for use in the development of Dade County, Fla.

The 20-man field party under Clarence

Symns, Jr., has begun a two-month, 150-mile geodetic survey to determine ground elevations between Delano and Daulton, Calif. The \$60,000 project is part of an NGS program to update the national network of elevations.

The agency's airport survey parties, also, are on the move. Junior V. Teater's party is now working at Burley (Idaho) Municipal Airport.

Having completed the survey at Indianapolis (Ind.) of Municipal/Weir-Cook Airport, the party headed by Lieutenant (j.g.) Robert E. Hunt is now working at Marion (Ind.) Municipal Airport.

Lieutenant (j.g.) Donald Suloff's party is scheduled to complete very shortly its survey of Allentown-Bethlehem-Eastern Airport, at Allentown, Pa., and will then proceed to Cuyahoga County Airport, in Cleveland, Ohio.

Darrell L. Wright's party has arrived at Drake Field in Fayetteville, Ark., after having recently completed its survey at McAlester (Okla.) Municipal Airport.

In each case, the party's survey is part of a joint program with the Federal Aviation Administration to advance air safety, and results of the survey, in conjunction with aerial photographs taken previously by the National Ocean Survey, will appear on an Airport Obstruction Chart to be published five or six months after completion of the survey.

Fish Recipes Available in Stores Under Washington Sea Grant

A pilot project to stimulate increased consumption of local seafoods has begun as a cooperative venture of the University of Washington Sea Grant Program, the fishing industry, and the National Marine Fisheries Service. Planned for a six-month trial, the project involves placing specially-designed recipe display racks in 30 stores and markets in the Puget Sound area. The racks will be kept filled with free recipe cards featuring tasty, easily prepared dishes using currently plentiful seafood, and changed monthly, by volunteers who are mostly members of the Puget Sound Gillnet Association Auxiliary and the Seattle Association for Fisheries. Both groups are wives of commercial fishermen.

The idea, originated by Sea Grant Advisory Services, has been planned and executed



with the cooperation of the Seattle-based National Federation of Fishermen and guidance from the NMFS regional office.

At the left, Trish Peyton of the University of Washington pulls a recipe card from a rack, as Roy Stevens, Regional Director of NMFS' Market Research and Services Division, and Katherine Mosness, Marketing chairman of the National Federation of Fishermen, watch.

NOS Fleet's Quarterly Operations Reported

The National Ocean Survey Office of Fleet Operations reported that the NOS' 14 vessels conducted operations during the first quarter of 1972 in the waters of Alaska, Washington, California, Maryland, Virginia, South Carolina, Georgia, Virgin Islands, Puerto Rico, the Western and Northeastern Pacific and the North Atlantic.

NWS Eastern Region Quality Control Officers Attend Training Seminar

Shown here are the participants in the National Weather Service Eastern Region Quality Control Officers Training Seminar held recently at Eastern Region Headquarters. They are (from left): Joe Turner, QCO WSFO Cleveland, Ohio; Vern Lindsay, QCO WSFO Washington, D.C.; Charles Archambault, QCO, WSFO Boston, Mass.; David Coulter, Regional Aviation Meteorologist; Bill Pogerman, Surface Systems, DATAC, ERH; Stanley J. Lacy, Domestic Aviation Services, NWSH; and Leonard Olson, QCO, ERH.



The discussion sessions highlighted the QCO's new expanded evaluation roles. The QCOs led discussions concerning current problems they are encountering and Mr. Lacy reviewed recent operational changes in the Weather Service's aviation program. Staff members from most ERH offices also participated in many of the discussion sessions.

NWS Fire Weather Meteorologists Geared Up for Busy 1972 Season

The National Weather Service's 62 Fire Weather Meteorologists are beginning what is expected to be a very busy season-- particularly those in the southwest, where a severe drought has made conditions quite volatile. (Phoenix, Ariz., for example, has gone without measurable rain for a record 150 days.)

The Phoenix Weather Service Forecast Office and fire weather unit recently provided meteorological support to fire suppression activities during the Battle (an area) fire in Prescott National Forest in Arizona.

Two NWS fire weather mobile vans--manned by Robert F. Allen and John B. Smith-- provided on-the-spot weather forecasts and advisory services to the fire control agencies, which during the two weeks spent \$1.9 million in suppression activities and equipment. Included in this cost were 1,067 organized fire crews, 20 bulldozers, 30 transport trucks to carry equipment, 61 ground tankers to carry water, almost 25 airplanes and 34 personnel carriers.

An additional NWS fire weather meteorologist, James J. McCoy, was dispatched from the Boise, (Idaho) Interagency Fire Center (BIFC) to assist with forecast services.

Robert S. Ingram, Meteorologist in Charge at WSFO Phoenix, and Mr. Smith represented the NWS in a briefing given the Governor of Arizona following this conflagration, which according to early estimates, destroyed 28,390 acres of Chaparral and Ponderosa pines and damaged just under \$30 million in resources.

Correction

The Conference on Operational Problems in Tropical Meteorology was held at the National Hurricane Center in Miami, Fla., not at the National Hurricane Research Laboratory, as stated on page 3 of NOAA WEEK dated May 26.

Nine NWS Employees Receive Group Special Achievement Award

Nine National Weather Service employees recently received a group special achievement award for their combined efforts in and contribution to the massive changes in the National Meteorological Center output which culminated in March 1971 in the inauguration of a new facsimile schedule for AMFAX and other circuits.

Award certificates were presented by NWS Director Dr. George P. Cressman and Deputy Director Frank W. Burnett to Harold A. Bedient, David S. Shimomura, Richard G. Schnurr, Gloria R. Dent, Edward Hopkins, Charles E. Lambert, Paul E. Lees, Joseph H. Des Roches, and Jeanne G. Gardner. The award represents a total of \$2,350 to the employees.

The changes involved automation and centralization of most of the international aviation facsimile products at NMC, and impacted on many other facsimile circuit schedules, domestic and foreign.

In the time available between operational uses of the equipment, products were designed and readjusted in response to field requirements, and many items coordinated with the airline industry and Canada; a reliable control procedure was developed; hardware was modified as government-owned equipment was integrated with IBM equipment and special system software to handle facsimile maps was acquired. Finally, the total NMC facsimile output was cross-checked with each circuit schedule to ensure there were no conflicts. The result of these actions was the most comprehensive change ever undertaken in NMC operations.

John A. Klinkhammer Is Presented NOAA NWS Public Service Award



John A. Klinkhammer of Vidor, Tex., (left), is shown above with A.J. Rohlf, Marine Supervisor at the National Weather Service Forecast Office in New Orleans, La., who presented him a NOAA NWS Public Service Award for 38 years of faithful weather reporting from ships at sea.

Carbon Dioxide Exchange Model

(Continued from page 1)

in years to come.

Economic analyses suggest that worldwide fossil fuel consumption may continue to increase about four percent annually until 1980 and, as nuclear power production becomes more prevalent, three-and-a-half percent annually between 1980 and 2000.

Using these figures, Dr. Machta's model predicts that in the year 2000 the atmospheric carbon dioxide concentration will be about 20 percent greater than the 1970 figure of 322 parts per million.

Increasing carbon dioxide should raise the temperature of the lower atmosphere, because it permits solar energy to pass essentially unchanged into the lower atmosphere but traps the earth's radiation, creating what is called a greenhouse effect. During the past decade or more, the rising atmospheric carbon dioxide concentration has been documented on a global scale. But despite the expected warming, ground level air of the Northern Hemisphere has cooled since the mid-1940's. Therefore, it is clear, Dr. Machta says, that carbon dioxide is only one of the factors that determine the temperature of the lower atmosphere.

The new model of carbon dioxide exchange provides an improved tool for scientific study of man's inadvertent modification of the earth's climate.

"Between 1958 and 1968," Dr. Machta says, "...only about half of the carbon dioxide produced from burning coal, oil, and gas has remained airborne. Presumably, the other half has entered the oceans or the biosphere."

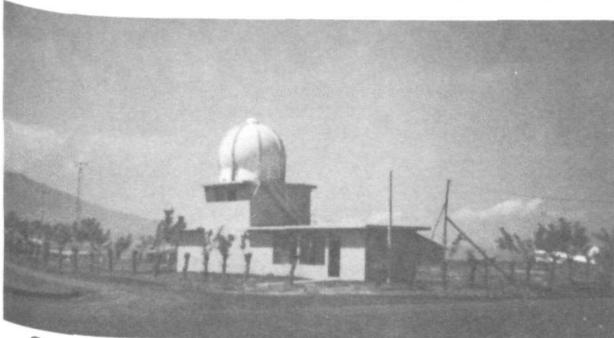
The model uses well-known physical processes to calculate the rate of exchange of matter between the upper atmosphere (stratosphere) and the lower atmosphere (troposphere), and between the deep oceans and the sea's upper or mixing layer. It also incorporates ecologists' estimates of the amount of carbon taken from the air or the ocean in one year by growing matter, and of the length of time carbon is tied up in the biosphere. In the long-term biosphere--trees, for example--carbon is assumed to return to the air after 40 years when the wood decays. In the short-term biosphere--such as leaves--the carbon re-enters the atmosphere after two years.

A carbon dioxide monitoring program, operated jointly by NOAA and the Scripps Institution of Oceanography, will document the global buildup of carbon dioxide.

Captain Kenneth G. Crosby Dies

Captain Kenneth G. Crosby, died May 26 in Orleans, Mass. His service of 38 years included command of the Ships PATTON, WESTDAHL and PATHFINDER. Prior to his retirement in 1961 he served in Washington, D.C., as Chief of the Tides and Currents Division and as Assistant Director of the Office of Oceanography.

Rawinsonde Station Inaugurated At San Jose, Costa Rica, Airport



Shown above is the new rawinsonde station at Cocos Airport, San Jose, Costa Rica, which was provided by the U.S. under the WMO Voluntary Assistance Program. The facility was formally inaugurated in a recent ceremony.

The Minister of Agriculture and Director of Meteorology of Costa Rica, the Director of Meteorology of Guatemala, the WMO Representative in Costa Rica, and the U.S. Charge d'affaires were among the dignitaries who attended and participated. Full credit was given to the U.S. with expressions of gratitude for the gift of this important meteorological facility.

Robert Fuller and James Courtney, NOAA NWS Technical Representatives, installed the station equipment, and Mr. Courtney remained to conduct training for the Costa Rican observers who will man the station.

Upper-air observations--one daily--began on April 17, while the observer training was still in progress. This is the first rawinsonde station in Central America to embark on a regular program of upper-air weather observations. Data from it will be of considerable value in meeting the U.S. responsibilities for tropical storm and hurricane forecasts for the Caribbean, Central America and the eastern Pacific areas.

NOAA Men Participate in Offshore Technology Conference in Houston

NOAA was well represented at the recent Fourth Annual Offshore Technology Conference in Houston, Tex., which was sponsored by nine international engineering and scientific societies.

Edward M. MacCutcheon, of the National Ocean Survey, chaired the Panel on Port Terminals.

Dr. Milton G. Johnson, Office of the NOAA Corps, spoke on "Benefits of Environmental Prediction in the Eastern Gulf of Mexico."

Ronald K. Brewer, of the National Ocean Survey, presented a paper on "Baseline Establishment for Positioning Federal-State Offshore Boundaries." Harland R. Cravat, also of the NOS, co-authored the paper.

A paper entitled "A 54-Cubic-Foot Bucket-Line Dredge for Offshore Mining", co-authored by Robert D. O'Brien and Charles M. Romanowitz of the Environmental Research Laboratories' Marine Minerals Technology Center, was presented by Mr. O'Brien, who

NCC Employees Participate In Weather Observing Course

Twenty-six National Climatic Center employees and seven Air Weather Service employees recently participated in a one-month Airport Training Course in Surface Weather Observing conducted at Asheville, N.C., Airport by both AWS and NCC instructors. The program was an outgrowth of discussions on upward mobility by NCC's Equal Employment Opportunity Committee. NCC participants were Grant Goodge, Hazel Smith, Don E. Duckett, John Snelling, Charles Aiken, Ann Lipe, Robert Pridgen, Betty Harrell, Carolyn Bradford, Joyce Morgan, Sophia Lee, Verne Marler, Paul Murphy, Otto Watley, Yolanda Everett, Alvin McCoy, James Sparrow, Ray Lyles, Roberta Corne, Faye Fox, Lucille Benson, Doyle Connor, Luke Swanger, Ella Phillips, Wanda Swann, Dorothy Hawkins, Betty Siberski, Mary Whitson, William Cassada, Lawrence Jordon, Dorothy Bartlett, Mildred Evans, and Judy Tomlinson.



Vernon Marler (NCC) and Mildred Evans (AWS) watch as Wanda Swann (NCC), seated at the instrument panel at WSO Airport, Asheville, makes observation entries.

is now with the National Park Service. All of the papers appear in the official volumes of preprints of the conference.



Mr. Padan

John W. Padan, Director of the Marine Minerals Technology Center, who for several years has served on the OTC Executive Committee (representing the Society of Mining Engineers of the American Institute of Mining, Metallurgical, and Petroleum Engineers, Inc.) was chosen as Vice President of the 1973 Conference.

It is scheduled to be held in Houston from April 29-May 2.

NWS Office of Hydrology Conducts Seminar and Conference



The National Weather Service Office of Hydrology recently conducted a seminar on conceptual models of streamflow simulation. From left, those attending were: Carl Relyea, HIC Cincinnati; Victor Hoffman, HIC Fort Worth; Max A. Kohler, Associate Director, Hydrology; William Fox, HIC Atlanta; Robert Burnash, HIC Sacramento; John Yates, HIC Tulsa; John Thomas, Eastern Regional Hydrologist; Jack Teague, Hydrologist, Atlanta; Dr. George P. Cressman, Director, NWS; Vail Schermerhorn, Hydrologist, Portland; Dr. Richard E. Hallgren, NOAA Associate Administrator for Environmental Monitoring and Prediction; Charles Hopkins,

HIC Hartford; Ola White, HIC Harrisburg; Roland Raetz, Western Regional Hydrologist; Herman Mondschein, HIC Kansas City; Clarence Vicroy, HIC Slidell; Gerald Williams, Hydrologist, Salt Lake City; Elroy Balke, Central Regional Hydrologist; Charles Schauss, Principal Assistant, Slidell; Russell Mann, Hydrologist, Kansas City; Glen Audsley, Alaska Regional Hydrologist. Present, but not in the photo were: Thomas Bowers, HIC Anchorage and John McCallister, Southern Region Hydrologist.

A separate Regional Hydrologists Conference was held during work shop periods of the seminar.

Hurricane Season (Continued from page 1)

called into play--a computerized, numerical prediction of the expected height of the storm surge, a tide of wind-driven water, which, rather than wind alone, is the real killer in most hurricanes. Dr. Simpson has estimated that 90 percent of hurricane victims die by drowning in tidal storm surges.

Numerical models for predicting storm surges are now available for coastal areas from Brownsville, Tex., to eastern Long Island. Developed by Dr. Chester Jelesnianski, of the Weather Service's Techniques Development Laboratory, the computerized system has been refined this year to include situations where hurricanes parallel a coastline but do not make landfall--"a particularly difficult problem to solve," according to Dr. Jelesnianski, and an important contribution because many hurricanes follow just such a path as they arc northward after crossing the Atlantic.

Also available this year for the first time will be additional storm-evacuation maps prepared by the National Ocean Survey (the former U.S. Coast and Geodetic Survey). These maps show areas that will be inundated by various levels of tide, and the best routes for evacuation inland. Maps are now available for a strip from Mobile, Ala., to New Orleans, La., and the Galveston, Tex., area. In process are maps for the Corpus Christi, Tex., area; a strip from Savannah, Ga., to Charleston, S.C.; and the Norfolk, Va., vicinity.

Population density continues to increase in low-lying areas that are subject to frequent hurricanes. Dr. Simpson has warned that there may come a time when the warning interval forecasters are able to provide will not be enough to evacuate en-

dangered populations by conventional means. Consequently, a pilot program involving "vertical evacuation" to sturdy highrise structures nearby is under study in the Greater Miami area this year. The study is being conducted by a Simpson-chaired committee of Miami's Federal Executive Board, and has the backing of the White House Office of Emergency Preparedness. If the program develops as hoped, Dr. Simpson believes it could become a model for other hurricane-vulnerable cities.

Another innovation this year will be inclusion in hurricane advisories and bulletins of regular statements of the expected wind speed in gusts, as well as the speed of the sustained wind. The goal is to impress on builders, structural engineers, and others who use such information that gust forces, though brief, should not be overlooked in calculations of what to expect from a hurricane or other severe windstorm.

Of particular concern in this connection is the growing number of people who live in communities of mobile homes. The NWS and a number of other safety-oriented agencies are strongly endorsing "Mobile Home Tie Down Month" in June to focus attention on the need for adequate anchoring of these lightweight structures against severe winds of all kinds, and for community storm shelters where residents can assemble when violent winds are forecast. Editors, broadcasters, and community-preparedness officials were encouraged to use a letter from NWS Director Dr. George P. Cressman in promoting this campaign.

Details about adequate anchoring of mobile homes against windstorms and "Mobile Home Tie Down Month" are available from Mobile Living Communications Center, Box 3431, Chicago, Ill. 60654.



Length of Service Awards

National Weather Service Southern Region employees who received Length-of-Service Awards in February, March, and April were:

45 years - Edgar J. SALTSMAN, WSFO/SC, Jackson, Miss. 40 years - Donnell H. GOULD, NHC, Miami, Fla., and Harold F. MURRAY, WSO Orlando, Fla. 30 years - Lorenzo D. WIRT, RH Fort Worth, Tex., Charles M. CROUCH, WSO Amarillo, Tex.; Daisy L. WILSON, WSFO Little Rock, Ark.; Reynolds C. HILLEY, WSO Macon, Ga.; James E. LUNNEY, WSO Midland, Tex.; C. Hugh SNYDER, FAA-Academy, Oklahoma City, Okla.; Raymond C. CROOKS, WSFO Oklahoma City, Okla.; Frank L. SEWALL, WSFO San Juan, P.R.; Earl BANKS, WSFO Birmingham, Ala.; Percy J. DEFPEZ, Jr., WSO Fort Smith, Ark.; William H. COOK, Jr., Edmund B. MEDINGER, and Herbert H. HILL, NHC Miami, Fla.; W. Clyde CONNER, WSFO New Orleans, La.; George M. KUSH, WSFO San Antonio, Tex.; Earnest HUTCHERSON, WSO West Palm Beach, Fla.; Harold G. BERNER, WSFO Memphis, Tenn.; Raymond J. CLARK, Jr., and Barney J. OZEE, WSFO Fort Worth, Tex.; James F. CORNELL, WSO San Angelo, Tex.; Sam A. DeLAY and Delbert W. ROBERTSON, WSO Chattanooga, Tenn.; James R. HADSOCK, WSFO San Juan, P.R.; Frank E. HOUGHTON, WSO/SC Las Cruces, N. Mex.; R. Larry MAYNE, WSFO New Orleans, La.; Richard F. MASON, WSO Tulsa, Okla.; Wilton L. RODGERS, WSO Huntsville, Ala.; John O. THATCH, WSO Knoxville, Tenn. 25 years - John F. MICHAELS, WSFO Albuquerque, N. Mex.; Gerald C. COUARD, WSFO Birmingham, Ala.; Ethel B. HOWARD, NHC Miami, Fla.; Richard E. LETTIN, WSO Tallahassee, Fla.; Robert C. PRITCHARD, WSO Montgomery, Ala.; Donald N. BANKS, RH Fort Worth, Tex.; Robert L. SMITH, WSO Apalachicola, Fla.; Darrel F. DOOLEY, WSFO Oklahoma City, Okla. 20 years - Jacques DeLANEY, WSO Augusta, Ga.; Julius L. SOILEAU, WSO Houston, Tex.; Laurence K. SMITH, WSFO Jackson, Miss.; Dexter M. FERRY, WSO Key West, Fla.; Wendell A. PORTH, WSO Tampa, Fla.; Dale A. BLACK, WSMO Centreville, Ala.; Billy J. CROUCH, WSFO New Orleans, La.; George T. WHITE, WSFO Birmingham, Ala.; and Mildred A. KIRKLAND, NHC Miami, Fla.

National Weather Service Central Region employees who received Length-of-Service Awards during in April were: 35 years - Jesse J. HALSEY, WSO Ft. Wayne, Ind. 30 years - Kelly F. ANDERSON, WSO Peoria, Ill.; Jane L. BROWN, CRH, Kansas City, Mo.; Kenneth B. COCHRAN, WSFO St. Louis, Mo.; Robert N. CRAIG, RFC Kansas City, Mo.; Harry V. HAIGH, WSFO Des Moines, Iowa; Arwin C. HOGE, WSFO Chicago, Ill.; Arnold H. JOHNSON, WSFO Minneapolis, Minn.; Nielo K. LAMPI, WSFO Minneapolis, Minn.; J. Earl OKSENDahl, WSO Fargo, N. Dak.; William L. TROXLER, WSO Sheridan, Wyo.; and Meredith WINGERT, WSFO Minneapolis, Minn. 25 years - Robert G. FLEMING, Jr., WSFO Des Moines, Iowa. 20 years - Blaine W. FLESHER, WSO Peoria, Ill.

NOAA Headquarters employees who received Length-of-Service Awards during April were: 30-years - Newton A. LIEURANCE, Nora E. TERRILL, Andrew A. LUHTANEN, Walter S. COX, Elmer G. NEUMANN, Rozell B. JONES, Jr., Marie C. HUBBARD, Iler M. SCHAUB, Margaret A. DALTON, Millard L. CUTLER, Raymond A. LANG, Herbert SILVERMAN, Beulah V. MICKENS, Fletcher M. GREGORY, James F. MURPHY, and Wayne C. PALMER. 25-years - Anne S. WELLS, Michael LANOSZ, Myrtle M. SORRELL, Richard A. BRINTZENHOFE, Donald C. AYERS, Richbell A. HASTINGS, William M. CLARK, Marvin BAYNARD, and Donald E. LINTHICUM. 20 years - Lawrence W. REGELIN, Van D. WOODY, and Dorsey Q. CORE.

National Weather Service Western Region employees who received Length-of-Service Awards during April were: 35 years - Edward H. TORNROTH, Eureka, Calif., WSO; and Robert L. KING, Tucson, Ariz., WSO. 30 years - Victor B. COTTEN, Yuma, Ariz., WSO; Lester B. LARSON, Walla Walla, Wash., WSO; Roy L. ANDERSON, Great Falls, Mont., WSO; Arthur W. FRITZ, Medford, Oreg., WSO; Asahel F. BURNHAM, Missoula, Mont., WSO; Eugene R. BENNICK, Phoenix, Ariz., WSO; Leo J. SANSREGRET, Jr., Portland, Oreg., WSO; Robert B. CARTER, Salt Lake City, Utah, WSFO. 25 years - Richard C. THEIS, Vandenberg AFB, Calif., WSMO; and George F. CARMICKLE, Pendleton, Oreg. WSO. 20 years - David R. LAMB, WRH DATAC; Calvin C. SCHOLTEN, Sacramento, Calif., WSO; and Edward L. HARMON, Spokane, Wash., WSO.

Garald C. RANDALL (left), NGSOC Kansas City, Mo., is shown receiving his 35-year Length-of-Service pin from Captain Gerald L. Short, Director of the National Geodetic Survey Operations Center. Other employees of the NGS Operations Center who received Length-of-Service Awards during April were 35 years - Clarence SYMNS, Jr., NGS Party G-36. 30 years - Coen SLOAN, NGS Party G-16. 25 years - Ralph PEKINPAUGH, NGS Party G-18.



National Weather Service Eastern Region employees who received Length-of-Service Awards during April were: 40 years - Abraham ZWECHER, WSO New York, N.Y. 30 years - Thomas C. MORGAN, WSO New York, N.Y.; John T. MURRAY, WSO Williamsport, Pa.; John H. THOMAS, ERH; Leo R. HARRISON, Jr., WSFO Washington, D. C. (Suitland); Stanley J. KROWKA, WSFO New York, N.Y., and Andrew J. DAVIS, WSO, Charlotte, N. C. 25 years - Thomas R. JENNINGS, WSFO Portland, Me., and Henry A. CHAPMAN, AWP, New York, N.Y. 20 years - Earle R. BROWN, Jr., WSSF, Wallops Is., Va.; Leo S. BROZENA, WSO WilkesBarre/Scranton, Pa.; Stanley WASSERMAN, ERH; Charles W. MILLER, WSO Mansfield, Ohio; Arnold M. JAMES, Jr., WSFO Boston, Mass.; and Ronald E. DRUMMOND, WSO Wilmington, N. C.

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notes about people...

Jesse R. Gulick, Meteorologist in Charge of the Miami Section of the National Weather Service Spaceflight Meteorology Group, is at Forbes Air Force Base, Topeka, Kans., providing on-the-scene weather guidance to the NASA operations staff detailed there in support of the current RB57F Earth Observations Aircraft mission.

The two principal aims of the mission are to obtain multispectral photography for several sites to be photographed later by the Earth Resources Technology Satellite, and to get photographic documentation of several cities in connection with census studies.



Roy Gibbens (center), a June honor graduate from Stephen Watts Kearny High School in San Diego, Calif., has been selected as a Junior Fellow by the National Marine Fisheries Center in La Jolla, Calif. During his vacation periods from Stanford University, where he has been accepted as a freshman, he will work with oceanographers Dr. R. Michael Laurs (left), Leader of the Center's Fishery Prediction R&D Investigations, and Ron Lynn (right). Under the Junior Fellowship program, work experience is provided for top quality students interested in pursuing courses of studies in fields for which NOAA has a long range need.

Stacy D. Hicks, a physical oceanographer in the National Ocean Survey, has been appointed a member of the Science Advisory Council now being formed by the Arlington County (Va.) School Board to assist it in improving the science curriculum of secondary schools in the county. He will serve on the eight-member council for an 18-month term.



William T. Barnes, Jr., Budget Analyst in NOAA's Budget Division, was overcome by smoke and hospitalized for several hours last week after he entered a smoke-filled lavatory and extinguished a fire in Building 5 at NOAA's Rockville, Md., headquarters.

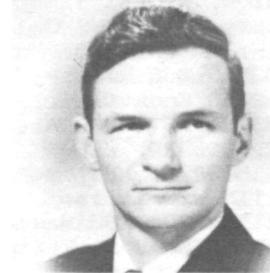
Oil-Water Separation System Developed Under Sea Grant

Jose Femenia, Engineering Dept., State University of New York Maritime College, has achieved a breakthrough in his Sea Grant project of developing an inexpensive shipboard oil-water separation system. A major source of oil pollution is the current practice of flushing out tankers at sea before taking on another type of cargo.

Mr. Femenia's cleaning method recovers the oil, using the water-injection cleaning apparatus already on board. The shipowners will have every incentive to use his method, because it saves money. Under the present system, the tanker has to either reduce speed considerably during cleaning operations, or carry extra heavy-duty boilers to get up enough steam to heat all the seawater required. With Mr. Femenia's method the wash-water is re-used with less heat loss than normal.

Mr. Femenia's separation system functions for the moment in a glass aquarium-like scale model, which will compensate for shipboard rolling and pitching. There is a possibility that his invention may be patented.

Commander Mobley Named AMC Operations Chief



Commander Wayne L. Mobley has been named Chief of Operations at the National Ocean Survey's Atlantic Marine Center in Norfolk, Va.

A commissioned officer since 1958, he was previously Chief of the Processing Division at the AMC.

Statistics, Market News Meeting Scheduled

The National Marine Fisheries Service has scheduled a June 7 and 8 nationwide meeting of Statistics and Market News professionals from the agency's field offices. The first of its kind, the meeting will be held in College Park, Md., and is designed to review program plans for FY '73; provide an overview of other NMFS programs; acquaint field personnel with Washington office operations and with fisheries resources and problems of other areas; and provide a briefing on studies being financed by the Washington office of Statistics and Market News.

Length of Service Awards (Continued from page 7)

National Weather Service Pacific Region employees who received Length-of-Service Awards during April were Robert CHUN, PRH, 30 years; and Flaviano LABAYA, WSO Kahului, 20 years.

Items to be considered for publication in NOAA WEEK should be submitted to:
Office of Public Affairs, NOAA, Room 221, Bldg. 5, Rockville, Md. 20852. Phone (301) 496-8243.

National Oceanic and Atmospheric Administration

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