



# NOAA news

National Oceanic and Atmospheric Administration

## Fishery Funds New Projects

Thirty-three projects to strengthen and develop the U.S. fishing industry have been approved for funding by Terry L. Leitzell, NOAA's Assistant Administrator for Fisheries.

The projects, totaling about \$8 million in FY 1980, are in two categories — fisheries development, and product quality and safety/consumer education. Twenty-three projects totaling more than \$6 million were approved for fisheries development, and 10 projects for more than \$1 million were approved for the other category.

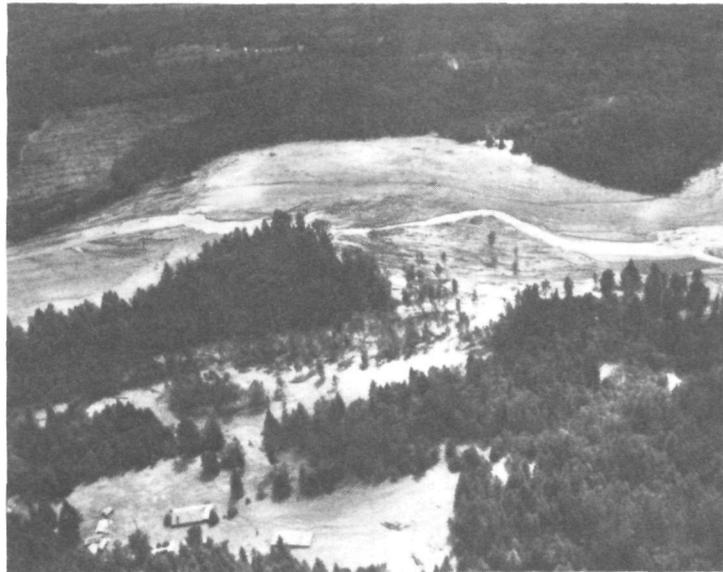
The major projects are expected to improve the fishing industry's ability to catch and market more fish, particularly non-traditional species that

*(Continued on p. 3)*

## President Visits Disaster Area

President Carter spent several hours in Grand Isle, Nebr., June 10 inspecting the devastation resulting from a severe weather outbreak on June 10 which killed 5, injured 200, and caused approximately \$300 million damage.

Among those briefing the President was Don Davis, Meteorologist in Charge of the Weather Service station at Grand Island. During the briefing, the President asked Davis about the number and intensity of tornadoes produced by the storm. He also said that he understood that the NWS gave the people of Grand Island excellent warnings.



**Volcanic debris** — Mud and ash clog the Toutle River after Mount St. Helens' eruption.

## Fla. Cloud-Seeding Resumes

NOAA scientists resumed a summer cloud-seeding experiment over southern Florida June 16 to verify "strong and consistent" evidence that seeding causes clouds to produce more rainfall over a large area.

This is the third summer of FACE-2, the second phase of the Florida Area Cumulus Experiment. This year's experimentation, intended to be the last in a three-year series, will run through August 31.

FACE-2 is designed to confirm positive results from earlier studies by NOAA researchers that cloud seeding does increase rainfall, both from individual cloud systems and over a large target area. If the experiment can corroborate those findings, the NOAA scientists and their university colleagues will have established that seeding clouds does increase total rainfall, rather than increasing rainfall from the seeded cloud

at the expense of unseeded clouds nearby.

Because weather-modification results are mainly statistical — that is, results are always a probability, never a certainty — project scientists randomize their seeding and non-seeding decisions, to keep even unconscious bias out of their subsequent interpretation of results.

Their analysis of statistical rainfall data will not begin until FACE-2 ends, probably after this summer's experimentation.

Three aircraft are used for seeding, one of them equipped to make cloud physics measurements in and around seeded clouds. The target area is a 5,000-square-mile (13,000-square-kilometer) trapezoid south of Florida's Lake Okechobee, where a dense network of rain gauges has been installed with the cooperation of local landowners. These measurements will permit

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## Fish Kill Study Set

NOAA will assess the effects of the Mount St. Helens volcanic eruptions on salmon and other fish in Northwest rivers clogged by mud and debris.

In testimony before the Senate Appropriations Committee, James P. Walsh, deputy administrator of NOAA, said the National Marine Fisheries Service estimates that about \$6 to \$8 million in salmon stock was destroyed by mud and ash that poured into the Cowlitz and Toutle Rivers during the first eruptions of the volcano.

Walsh told the committee that one casualty of the Mount St. Helens eruption might be a hatchery on the Toutle River which is oper-

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## Satellite Tracks Yacht Competition

The more than 100 yachts entered in the Royal Western/Observer Singlehanded Transatlantic Race in June were tracked by satellites on their lonely voyages across the Atlantic from Plymouth, England, to Newport, R.I.

For the first time in the 20-year history of the race — which pits sailors in individual boats against one another and against the Atlantic Ocean — organizers of the race and those providing rescue services knew every six hours the precise location of each yacht.

Two NOAA polar-orbiting satellites picked up signals from transmitters aboard each boat and sent them to the National Environmental Satellite Service.

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## LETTER FROM THE LABS

By Richard Newell

**Ocean-Climate Link Questioned** — In a recent talk at the Environmental Research Laboratories headquarters in Boulder, Prof. Colin S. Ramage, chairman of the Department of Meteorology at the University of Hawaii, cast some doubt on the idea that sea-surface temperature changes in the tropical Pacific might directly affect mid-latitude climate.

Prof. Ramage based his talk on recently analyzed maps depicting the state of the ocean and atmosphere during the 1972-73 "El Niño" event, characterized by unusually warm temperatures over large areas of the eastern tropical Pacific Ocean. Understanding the origins of such events and their impact on year-to-year climate changes is one of the goals of NOAA's EPOCS (Equatorial Pacific Ocean Climate Studies) program.

Ramage showed that the El Niño equatorial warming was accompanied by no apparent increase in local sea-to-air energy transfer. Moreover, the near-equatorial cloud band typically associated with tropical rain and upward transfer of latent heat was located some 5 to 10 degrees (300 to 600 miles) to the north.

"Obviously, there is no simple relationship between sea surface temperature and tropical rainfall, as suggested by early studies based on limited data," said Ramage. To determine the heat loss from the ocean, he said, we need to look at not just sea surface temperatures, but at their horizontal gradients, together with the air temperature and the velocity of the surface winds.

**Aircraft Probes Convergence Zone** — In a related study, observations from twelve flights of NOAA's P-3 aircraft between Honolulu and Tahiti during the winter of 1977-78 have been used to learn more about the atmospheric convergence zone associated with the near-

equatorial cloud band, according to Dr. Siri J. S. Khalsa of the NOAA/University of Hawaii Joint Institute for Marine and Atmospheric Research.

The convergence zone, a band of cloud build-ups and rainfall, separates the northeasterly trade winds of the Northern Hemisphere from the southeasterlies of the Southern Hemisphere. Dr. Khalsa, who co-authored this study with Ramage, points out that this zone of converging and rising moist air has been thought to be the link between equatorial sea surface temperature changes and mid-latitude climate variability.

Khalsa states that the aircraft data are consistent with the El Niño data, in that although the position and intensity of the convergence zone were observed to change dramatically from one day to the next, these changes were apparently not directly controlled by the underlying ocean. Atmospheric soundings from several island stations and from the aircraft, as it descended and ascended, verified the existence of a dry layer capping the trade wind moist layer. "The dry layer seemed to determine what convection could occur, by cutting off convection whenever the moisture convergence was inadequate to maintain it," Khalsa explained.

"There are hints that the dry layer may be influenced by the influx of air from mid-latitudes," he said. "In other words, it may be that the tropics are as much influenced by mid-latitude events as the other way around."

Khalsa adds that although we know that sea surface temperatures, trade wind strength, precipitation in the tropics, and mid-latitude circulation are related, we haven't yet really determined which are causes and which are effects. He is planning research which he hopes will help to answer these questions.

**A Sun-Climate Link?** — Dr. Steven T. Suess of the Space Environment Laboratory studies holes in the corona, the sun's diffuse outer layer. Coronal holes, one of the primary sources of the solar particles that cause disturbances in the earth's magnetic field, are most active in the years just before each 11-year sunspot minimum.

Suess, a member of the laboratory's Interplanetary Studies Group, is attempting to calculate the behavior of these low-density coronal regions, in a long-term effort to predict their earthly effects. "We are now modeling, for the first time, how a coronal hole changes in response to changes on the sun related to the 11-year sunspot cycle," he states. He developed the new mathematical model with the help of Drs. Richard S. Steinolfson and Shi Tsan Wu of the University of Alabama.

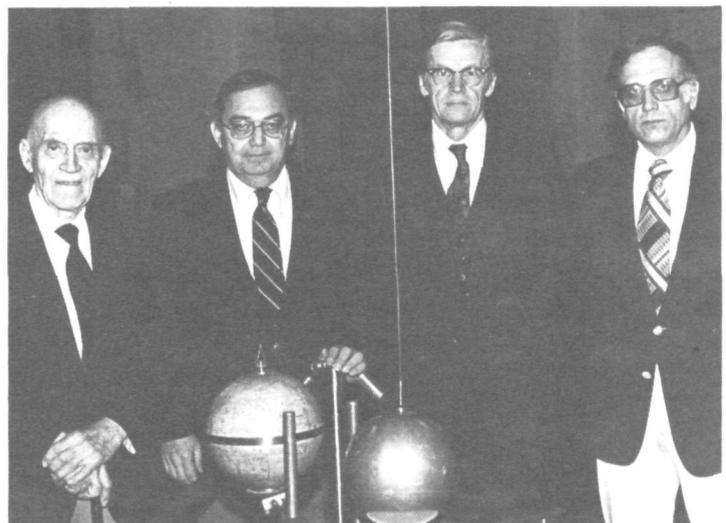
At this point, the model is only a research tool, he emphasizes. Although it cannot yet be used to predict the solar wind's characteristics at earth orbit, it is now far enough advanced to be used to test certain ideas about

coronal holes.

Suess explains that the model describes how coronal holes that are located at their favored positions, over the sun's north and south poles, grow and shrink over the sunspot cycle. The model also tells something about the temperature of the holes and how their evolution depends on both the strength and geometry of the sun's magnetic field.

"Eventually, we'll also model the equatorward extensions of the polar holes," says Suess. "These produce the solar wind streams that affect the earth most strongly."

He also looks forward to applying the model to studies of solar wind variations over the 22-year, or double-sunspot, cycle — a cycle that certain climate variations seem to follow. "Based on what other scientists have learned in the past few years," Suess explains, "it appears that the sun's effects on weather and climate may depend on more than sunlight alone. There are signs that changes in the sun's extended magnetic field, incorporated in the solar wind, may also be involved."



NWS leaders, past and present, attended a scientific meeting at the National Academy of Sciences in March. Directing National Weather Service operations for the past 41 years are (from left) Dr. Francis W. Reichelderfer (1939-1963), Dr. Robert M. White (1963-1965), Dr. George P. Cressman (1965-1979), and Dr. Richard E. Hallgren (1979-present).

# Hock, Snodgrass Named Directors of EDIS Unit

The Environmental Data and Information Service has named new directors for two of its centers. Dr. Joan Hock is director of the Center for Environmental Assessment Services, and Dr. Rex J. Snodgrass is director of the Environmental Science Information Center.

Dr. Hock was formerly director of the Department of Energy's Regional Assessment Division.

She first entered the Federal Government as a staff member of the President's Council on Environmental Quality. In 1972, she transferred to the Environmental Protection Agency to work on economic policy issues. In 1973, she was appointed chief economist with DIBA in the Department of Commerce and worked on the International Trade Study. Subsequently, she was named chief economist for the Federal Energy Administration



Joan Hock

(now the Department of Energy), where she supervised environmental assessments of coal and oil development in the inter-mountain regions of the West. In 1978, she completed a market penetration and risk model on building and industry conservation technologies, and chaired an interagency Task Force on Gasoline Rationing.

Dr. Snodgrass was previously manager of Technical Services and assistant director of the New England Research Application Center at the University of Connecticut, where he was responsible for technical and scientific information services to industry, business, and government. In addition, he is an expert on solar energy and has held several consulting positions with government and industry.

He received his undergraduate degree from Harvard in engineering and applied physics, and his doctorate in physics from the University of Maryland. He has also conducted research at the University of Paris, France. From 1960-66, Dr. Snodgrass was a physicist with the National Bureau of Standards, and in 1966, he accepted a faculty position in the Department of Physics and Institute of



Rex Snodgrass

Material Science at the University of Connecticut.

Dr. Snodgrass is the author of a number of journal articles in the areas of information science, solar energy, and the physical sciences. He is a member of the American Physical Society, and the Forum on Physics and Society.

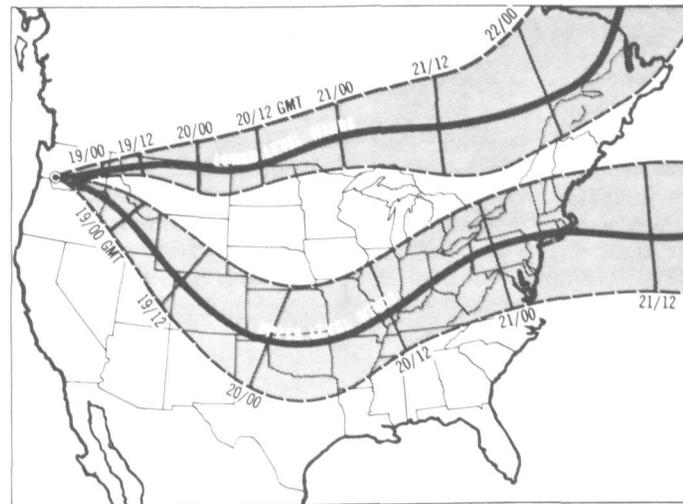
## Fish Kill Investigated

(Continued from p. 1)

ated by the state of Washington with NOAA's financial assistance. Walsh said NOAA and Washington state personnel are now attempting to determine whether the hatchery can be repaired.

He said NOAA does not as yet know what impact alterations to the area rivers will have upon anadromous fish. Walsh said that all of the fish in the Toutle River and major tributaries have been killed and the river is uninhabitable. He said that the lower 20 miles of the Cowlitz also will not support fish life and is proving a barrier to fish trying to move upstream.

"Our immediate concern is what effect the turbidity in the Cowlitz will have on the adult chinook and coho which will be returning in the fall to spawn in Cowlitz. At this point," Walsh said, "juvenile salmon are dying after six hours in the Cowlitz."



**Volcanic Ash Tracked** - Scientists of the National Oceanic and Atmospheric Administration (NOAA) have issued maps of the volcanic plume-track predictions used to estimate the arrival time of the ash, from the May 18 St. Helens eruption, at various points across North America. Trajectories were prepared for seven different levels in the atmosphere, ranging from 5,000 feet to 60,000 feet. This composite illustration of the upper- and lower-level tropospheric (weather layer) trajectories includes an estimate of the horizontal spread of the ash along the two tracks. Brisk upper level winds, between 20,000 and 40,000 feet, swept volcanic debris over the central states in two to three days, while winds below 10,000 feet carried ash over southern Canada over a period of three to four days. Times listed are Greenwich Mean Time - subtract four hours to arrive at Eastern Daylight Time. For example, 19/00 and 19/12 indicate May 18 at 8:00 p.m. EDT and May 19 at 8:00 a.m. EDT, respectively.

## NMFS Funds Fishery Projects

(Continued from p. 1)

are available off all U.S. coasts. The funds will be used to develop, test, and market new products at home and overseas and to organize fragmented parts of the fishing industry so that they will be able to begin a consumer education and seafood marketing program. Additional funds will be used to stimulate the development of adequate processing capacity and the establishment of diversified domestic and foreign markets for bottomfish.

Funds devoted to product quality and safety are expected to benefit consumers by assuring them a more wholesome and safe product and assist the industry by reducing the costs of expensive analytical tests necessary to produce new fishery products. Funded studies should remove some impediments to the development of a number of non-traditional fisheries.

# Big Island Explored

NOAA scientists and the University of Hawaii have studied a tropical island noted for its benevolent climate as a means of improving predictions of less pleasant weather, tornadoes, hail, and flash floods.

Using one of the Commerce Department agency's advanced research aircraft (a WP-3D Orion), instrumented vans operated by the University, ground stations, and balloons, the researchers are examining clouds, air flow, precipitation, and airborne particles around the Big Island of Hawaii.

The two-week study, co-ordinated by Dr. Everett C. Nickerson of the Atmospheric Physics and Chemistry Laboratory in Boulder, Colo., has begun June 12.

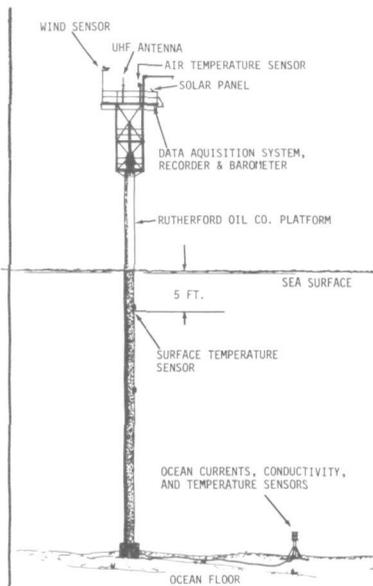
The main goal of the study, the Hawaii Mesoscale Energy and Climate (HAMEC) project, is to improve understanding of local-scale weather, not only for better warn-

ings of hazardous weather, but for more efficient use of renewable and nonrenewable energy resources.

Researchers at the Boulder laboratory have been devising numerical models of meso-scale meteorology - weather on the scale of large metropolitan areas and counties. Such models will be central to improved local forecasts.

The University of Hawaii researchers have been actively engaged in identifying sites on the Big Island for exploiting wind power and solar energy. Mesoscale models that can simulate Hawaiian weather could play a vital role in these efforts by predicting time-and-space variations in wind and cloudiness.

The Big Island, with its isolated Pacific location, its varied topography, and trade winds that breed a vast array of mini-climates in a small area, is a near-perfect natural-laboratory for such studies.



**Monitoring System** - Meteorological and oceanographic sensors on this monitoring system developed by the Data Buoy Office measure wind speed and direction, air pressure and temperature, current speed and direction, surface temperature and conductivity.

# Oil Study Underway

Aided by an environmental monitoring system developed by the NOAA Data Buoy Office, scientists are studying the possible effects of rinsing out huge salt dome caverns under the ocean floor for use as oil supply storage areas.

The monitoring system is an essential part of the Department of Energy's Strategic Petroleum Reserves Program, an effort to store enough crude oil to supply the U.S. for up to one year in case of an oil embargo.

If the program is fully implemented, vast storage areas will be required for the large volume of oil anticipated, which is estimated to be between one-half and one billion gallons. Underground salt domes along the Gulf Coast states have been selected as possible suitable facilities.

These domes have been mined of all salt deposits and therefore contain huge cavities attractive for oil storage. However, the water that presently fills the domes has absorbed the residual salt and thus has a salinity count about seven times that of the ocean. Disposal of the brine for replacement with oil presents a serious problem, since it could adversely affect the marine biological cycle if carried inland or indiscriminately dumped at sea.

In 1977, the NOAA Data Buoy Office (NDBO), in cooperation with the Department of Energy and NOAA's Environmental Data Information Service, agreed to establish an environmental monitoring station on an oil rig about six miles offshore located near the Bryan Mound storage facility near Freeport, Tex. The outfall of the brine system is 6 miles further offshore in 70 feet of water.

The NOAA Data Buoy Office developed an environmental monitoring system to record conditions at the site. The system's meteorological

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# Satellites Track Yacht Competition

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The transmitters sent information on atmospheric pressure and temperatures in areas through which the



**Promoted** - Fred Ostby is the new director of the National Severe Storms Forecast Center. Ostby joined the NWS in 1970.

yachts sailed. Data of this sort from remote locations are valuable to weather forecasters, and are removed from the data stream at the National Meteorological Center, also located in Suitland. That portion of the data used to determine the transmissions from the boats was relayed to Toulouse, France, where the French space agency, CNES, operates the Argos data collection system under contract to NOAA.

Computers at Toulouse used the transmissions to determine the exact position for each of the yachts. This information not only let the world know who was leading in the race, but - should a transmitter on any yacht stop sending a signal - would have indicated to rescuers the last known position of a craft that has sunk or been abandoned.

During past races, the competitors have rarely been seen at sea, and their positions were known only sporadically. Often, no one knew the leaders in the race until their craft approached Newport.

Last year during a French-sponsored yacht race from L'Orient, France, to Bermuda and back, similar transmitters were placed aboard the 30 or so craft competing. Three of the yachts sank, but the NOAA system played a key part in assuring that their crews were rescued.

## Contract Let

NOAA has awarded a \$2 million contract to Princeton University to add nearly 19,000 square feet to the Geophysical Fluid Dynamics Laboratory on the Forrestal campus.

## Rip Current Threatens Unwary, NOAA Oceanographers Caution

Ignorance of rip currents, NOAA oceanographers warn, is more dangerous than the flow of water itself.

Each year thousands of swimmers needlessly risk and sometimes lose their lives because of their failure to understand the nature of the currents. NOAA's ocean experts attribute most fatalities to unwise attempts to fight against the stream of water.

A rip current is a strong, narrow outflow of ocean water that carries back to sea the water brought in by waves. These currents are found off most long, gently-sloping sand beaches. The position of the currents may change from day to day. Several may exist simultaneously at the same beach or may not occur for weeks.

The first indication that you are in a rip current is when your feet occasionally touch the bottom, and you get the feeling the ground is moving fast toward shore. When your feet no longer touch bottom you find yourself farther from shore than you expected, or moving seaward faster than others near you.

This is the point at which most swimmers make their fatal mistake and start swim-

ming their hardest toward the shore and against the current. Because the current is seldom more than 10 to 20 feet wide, swimmers should swim *parallel* to the beach, and quickly get out of the current.

An alternative is to relax and let the stream carry you seaward through the surf zone into the rip head where it slows down. From there, you can leisurely swim back to the beach parallel to the rip current.

You can avoid rip currents altogether if you know what to look for. The rip current breaks up the normal wave pattern on a beach, appearing as a criss-cross line running perpendicular to the shoreline. Small, choppy waves may form along either side of the rapid outflow of water out to the surf zone, and often the rough water will whip up a foam line that shows the location of the rip current. Another giveaway is an area of discoloration in a patch of water running from the beach out to sea. This may signal bottom material being picked up by the rip current and being churned along out to sea. If you see any of these signs, stay out of the water in or near them.



**Watch out!** Unwary swimmers may fall prey to rip currents, NOAA oceanographers say. Kids and grown-ups, too, should know how to react to them.

## Offshore Oil Study Underway

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logical and oceanographic sensors measure wind speed and direction, air pressure and temperature, current speed and direction, surface and bottom sea temperature, and conductivity. Data are collected every hour and transmitted to the Data Buoy Office via NOAA's GOES satellite and landline. The data are quality checked and compared to National Weather Service meteorological maps. Each month the data are sent to the Environmental Data and Information Service where data are archived.

In this marine environment, the oceanographic sensors have to be replaced because of biological fouling. The warm, shallow waters produce a rapid growth of algae, bryozoans, oysters and barnacles. The sensors are coated with an anti-fouling paint, but the maximum deployment cycle is only four months. After this, the sensors have to be retrieved, refurbished and calibrated.

Another problem, successfully overcome by the NDBO, was that of bulky equipment. The first oceanographic sensor picked for the system, a vector averaging current meter, was both heavy and awkward to deploy. It required a boat with a crane to install it.

NDBO and its contractor, Bay Technical Associates, developed a more compact sensor package which included a current meter, a conductivity probe, and a temperature sensor. This system was much more easily deployed in March of this year by a small fishing boat. Improved reliability was also built into the sensor package.

Future priorities, according to NDBO, will be assigned to improving the anti-fouling system and increasing the deployment life of the oceanographic sensors. —O.J. Howe



**ACO Luncheon** — Lt. Cdr. Stewart McGee, Jr. (standing) addresses the Washington area NOAA Association of Commissioned Officers (ACO) on Minority and Women recruitment by the NOAA Corps.

# NOAA Suggestion Awards

(Continued from June 2 issue)

Employees who had suggestions accepted for adoption during the months of October through March 1980 include:

Potter, David C. NMFS, Northeast Region Gloucester, Mass.	\$ 25.00	NEFC 79-4	Elevator Use
Potter, David C. NMFS, Northeast Region Gloucester, Mass.	50.00	NEFC 79-5	Gasoline Security
Reutlinger, Jerry F. NWS, Eastern Region Garden City, N.Y.	200.00	9-052	Micro-Dardec
Reich, Bruno NESS, Headquarters	350.00	1855	A Proposal to the Director of NFSS for Managing Accountable Property
Rossi, Frank P., Cdr. NOS, Headquarters	50.00	1899	Template: Hydrography Photogram- metry, Field Edit.
Rounds, William T. NESS, Headquarters	25.00	1964	Nicad Battery Repair
Schwier, Mary NESS, Headquarters	50.00	1890	NESS Computer Effectiveness Form
Sharpe, Emma Admin., Headquarters	40.00	1919	Federal Ship Financing Fund, Cash Receipts Register
Shipe, Albert P. WSFO, Indianapolis, Indiana	100.00	3-2380	Observer Change of Address
Snyder, Richard A. NWS, Southern Region Fort Worth, Texas	50.00	2-2016	Bird Deflector for Hydrologic Evaporation Pans
Swanner, Susan A. ERL, OMPA, Boulder, Colorado	100.00	R904-264	Digital Printout Reader
Thorsen, Bernard W. NWS, Eastern Region Garden City, N.Y.	200.00	9-066	Salvaging AMOS Precipitation Data
Soini, Florence M. NMFS, Northeast Region Gloucester, Mass.	150.00	NE 79-4	Exemption/Cancellation Form

## CURRENT NOAA VACANCIES

Announcement Number	Position Title	Grade	Organ- ization	Location	Issue Date	Clos- ing Date
NWS-80-102(F/M)	Program Analysis Officer	GS-15	NWS	Silver Spring, Md.	6/10	7/1
NWS-80-107(GZJ)	General Engineer	GS-13	NWS	Silver Spring, Md.	6/13	7/7
NWS-80-106(GZJ)	Physical Scientist	GS-13 (promotion potential to GS-14)	NWS	Silver Spring, Md.	6/17	7/9
NWS-80-105(WL)	Meteorologist	GS-11	NWS	Camp Springs, Md.	6/17	7/1
NWS-80-104(AM)	Computer Programmer	GS-7 (promotion potential to GS-11)	NWS	Silver Spring, Md.	6/17	7/1
NOS-80-75(DB)	Surveying Technicians (2)	GS-7	NOS	Rockville, Md.	6/16	6/30
NOS-80-74(LAD)	Chief, Photomechanical Branch	WP-4401-30	NOS	Washington, D.C.	6/16	7/8
NOS-80-73(LAD)	Supervisory Printing Plant Equipment Repairer	WP-4418-26	NOS	Washington, D.C.	6/13	7/7

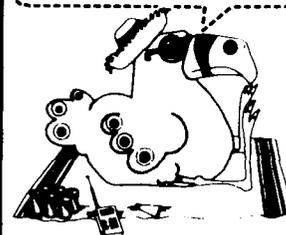
NOTE: THIS LISTING INCLUDES ONLY NOAA-WIDE OR DOC-WIDE VACANCIES: VACANCIES POSTED ONLY WITHIN A LOCAL COMMUTING AREA ARE EXCLUDED.

## NOAA Seeking Blood Donors

The summer months create an especially critical need for blood donors since most people increase their travel and outdoor activities. Anyone may be eligible to give blood if they are in good health, weigh at least 110 lbs. and are between the ages of 18 and 66. The actual donation only takes about 8-10 minutes but additional time is needed for registration, medical history, and, of course, to partake of the refreshments.

In an effort to do their part, NOAA employees who can give blood are encouraged to do so. Encourage a co-worker to come along to any of the regularly scheduled NOAA bloodmobiles in the Washington Metropolitan area. This will be assuring coverage of the total blood needs of all our area employees and their families. For this purpose "family" includes anyone related to you regardless of where he/she lives. So in reaching our quota each year, which is needed to assure this coverage, we need the support of all employees who are eligible to give blood. For further information on bloodmobile schedules and locations or any information on NOAA's Blood Donor Program contact Vickie Cline on (301) 443-8105.

"Some people claim  
we're love birds."



The summer blood donor  
is a rare bird. Be one.

The American National  
Red Cross

Harry S. Hassel has been named deputy director of the National Weather Service's Western Region. He is expected to take over the post at Western Regional Headquarters in Salt Lake City, Utah, in mid-summer.

Hassel is a 1964 graduate of the University of Utah. He joined the Weather Service in 1965 and has held forecaster positions at Seattle, Wash.; Great Falls, Mont.; and Salt Lake City. He also was regional program manager for agricultural meteorological service while assigned to regional headquarters. His current assignment is as dep-



Harry S. Hassel

uty meteorologist in charge of the San Francisco, Calif., Weather Service Forecast Office.

## Hagemeyer Takes New Position In National Weather Service

Richard H. Hagemeyer, a long-time NOAA employee, has been named Executive Director of the National Weather Service. He will direct all of the Weather Service's day-to-day non-technical management activities.

In his new position, Hagemeyer will be responsible for the Executive Affairs Staff, the Resources Management Staff, and the Workforce Management Staff. No changes were made within these staff offices.

Hagemeyer joined the National Weather Service in 1950 with assignments including Officer-in-Charge of

weather stations in the Marshall and Western Caroline Islands. Other headquarters managerial assignments included direction of the Capital Equipment Program, Resource Management for the Office of Meteorological Operations, and finally Staff Assistant to the Director with responsibility for the Weather Service's financial budgeting, and general management activities.

Hagemeyer served at NOAA Headquarters from 1975 to 1979. In October, he was appointed acting deputy assistant administrator for management. He assumed his present position in May.

## New Appointments Made by NOS

Recent appointments in the National Ocean Survey include the naming of Captain James S. Midgley as deputy associate director of the Office of Marine Surveys and Maps, and James E. Pettey as assistant chief of the National Geodetic Survey's Gravity, Astronomy and Satellite Branch.

Captain Midgley will assist in the administration of the office, which is responsible for the collection and evaluation of marine navigation and marine geophysical data and the compilation of nautical chart data.

Captain Midgley was appointed to the NOAA Corps in June 1959 with a degree in civil engineering. He has seen duty at the NOAA Magnetic Observatory and at the Tsunami Warning Center, Honolulu, Hawaii.

He was also chief of the Processing Division at the Pacific Marine Center in Seattle, Wash.; chief of the Operations Division in the Office of Fleet Operations, and served aboard the *Pathfinder*, the *Explorer*, the *Hilgard* and *Wainwright*, and most recently was Commanding Officer of the *Mt Mitchell*.

As assistant branch chief, Pettey will share in the ad-

ministration and supervision of branch activities while continuing his studies of geodetic instrumentation and the refinements of observational procedures in areas of geodesy.

Pettey's employment with the NGS, began in 1952 as a member of a triangulation party. In July 1953, he was drafted into the U.S. Army and served nearly two years before returning to NGS in 1955. He then served 10 years at the Cape Kennedy complex as a member of an NGS special purpose survey team that performed very high accuracy surveys in support of the U.S. space program.

In 1965, Pettey was promoted to chief of an astronomical field party and traveled extensively observing astronomical latitudes and longitudes throughout the United States. From 1966 to 1969, he worked in the Gravity and Astronomy Branch and then became chief of the Instrument and Equipment Branch. In 1973, he returned to NGS headquarters as chief of the Gravity and Astronomy Section, the position which he occupied until his appointment as Assistant Branch Chief.



**New Unit** — Dr. Carl Sindermann, director of the Northeast Fisheries Center, Sandy Hook Laboratory, N.J., officially opens the center's new analytical chemistry unit. The specially-equipped facility will be used to determine contaminants in marine biota and sediments.

## Florida Cloud Seeding Resumes

(Continued from p. 1)

comparisons of how much rain falls from seeded and unseeded clouds, and refine estimates of rainfall based on observations by the National Hurricane Center's weather radar.

Other research conducted with FACE-2 includes a continuing study of lightning production in seeded and unseeded clouds, and the apparent effects of seeding outside the target area. A five-

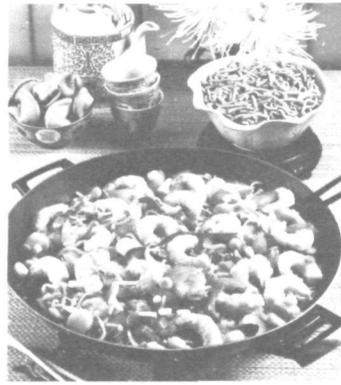
centimeter radar operated under contract by the University of Miami provides data on cloud growth in the target area.

Dr. William L. Woodley of the National Hurricane and Experimental Meteorology Laboratory (of NOAA's Atlantic Oceanographic and Meteorological Laboratories) directs FACE-2. Dr. Paul E. Lopez is chief of the laboratory's Cumulus Group.

**FROM THE GALLEY**

**SHRIMP CHOW MEIN**

- 1 pound medium-size, cooked, peeled, and deveined shrimp, fresh or frozen
- 1 tablespoon cooking oil
- 1 clove garlic, sliced
- 1 cup diagonally sliced celery
- 1/2 cup green pepper strips
- 1/4 cup thinly sliced green onion
- 1 can (16 ounces) bean sprouts, well drained
- 1 can (8 ounces) bamboo shoots, well drained\*



- 1 cup water
- 4 teaspoons cornstarch
- 1 tablespoon soy sauce
- 1/4 teaspoon salt
- 1 chicken bouillon cube, crushed
- 1 can (3 ounces) chow mein noodles

Leave shrimp whole or cut in half lengthwise, as desired. Heat oil in skillet. Add garlic and brown lightly, stirring constantly. Remove garlic and discard. Add celery, green pepper, and onion to pan; cook and stir to heat through about 1 minute. Add bean sprouts and bamboo shoots; heat, stirring frequently. Combine water, cornstarch, soy sauce, salt, and bouillon cube; stir until free of lumps. Pour over hot vegetables; cook until sauce is thickened, stirring carefully until sauce is clear. Fold in shrimp; heat. To heat chow mein noodles, spread in shallow baking pan. Place in slow oven, 300°F., 3 to 4 minutes or to serving temperature. Serve shrimp mixture with chow mein noodles. Makes 4 servings.

\*If desired 1 can (8 ounces) water chestnuts, sliced, may be substituted.

**NOAA news**

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**Oceanographer Crewman Saves Life of Drowning Victim**

Dennis J. Padilla of the crew of the NOAA Ship *Oceanographer* has been commended for this action in saving a Philippine Navy man who fell from the vessel during the night of May 18.

The man, a crew member of a Philippine Navy Patrol Craft, slipped and fell from a ladder into the sea between the NOAA ship and the patrol boat.

According to Captain Gerald C. Saladin, the *Oceanographer's* commanding officer, "He was in a precarious situation: the water was choppy, the two vessels were only separated by two small fenders and were rubbing against each

other, he did not have a life jacket on, and he was making no attempt to assist himself."

Although he was not wearing a life jacket himself, Padilla immediately jumped into the water and pulled the man to where he could be lifted aboard.

"Because of the surge and undertow between the vessels, the darkness, and his helpless condition, your immediate response was necessary to save his life," Captain Saladin wrote in a letter of commendation to Padilla. "You are a credit to our country, your family, and yourself. It is my esteemed pleasure to serve with you."

**A New Captain for Mt Mitchell**



**Welcome Aboard** — NOAA Ship *Mt Mitchell* recently had its sixth change of command. On May 2, Capt. James S. Midgley (1), who reported aboard the *Mt Mitchell* July 22 1978, was relieved by Capt. Robert A. Trauschke, formerly chief, Processing Division, Atlantic Marine Center. Capt. Midgley's new assignment after serving 2 years on the *Mt Mitchell* will be deputy director, Marine Surveys & Maps, Rockville, Md. In the background is *Mt Mitchell's* executive officer, Cdr. Ludwig Pheiffer.

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