
NEWSLETTER

WOODS HOLE
OCEANOGRAPHIC INSTITUTION



DECEMBER 1990/JANUARY 1991

AMS Facility nears completion

Set-up of the National Ocean Sciences Accelerator Mass Spectrometry (AMS) Facility at McLean is almost complete. The state-of-the-art facility will reach one of its major milestones — detecting Carbon-14 — in the next few weeks.

The AMS facility, funded through a \$5 million cooperative agreement with the National Science Foundation, will provide high precision carbon-14 dating to the ocean research community. There are currently only six AMS facilities in the world, dedicated largely to performing radiocarbon analyses. The WHOI facility will be the first of the second generation AMS instruments.

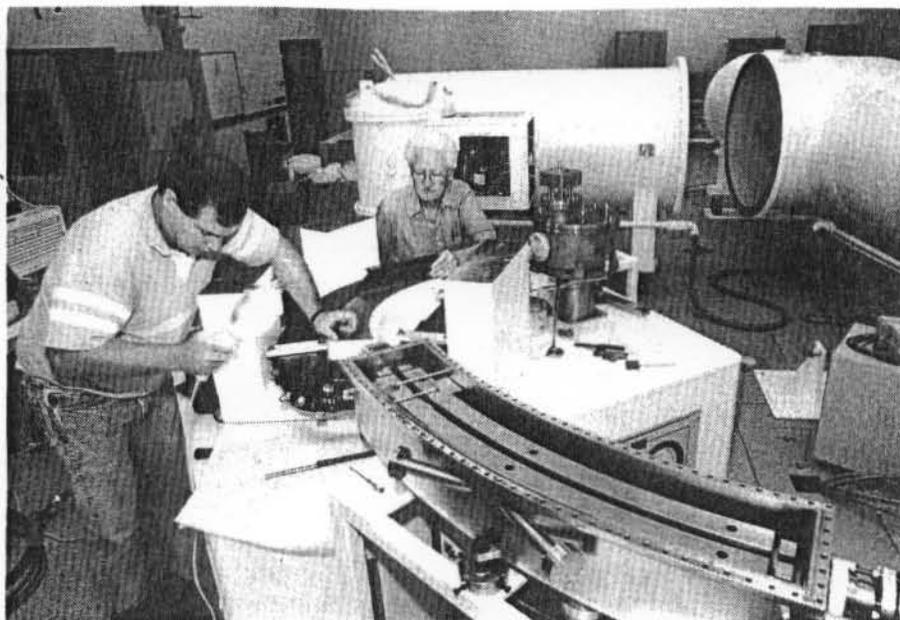
The only other AMS radiocarbon facility in the United States is located in Arizona, and is used primarily for earth sciences research.

WHOI was awarded the cooperative agreement for establishing the National Ocean Sciences Accelerator Facility in January 1989. Since then, the Facility has hired staff, built a 9,300-foot addition to the McLean Laboratory to house the facility, and finalized the instrument's design.

In addition to the NSF funding, the AMS Facility obtained an \$81,000 equipment grant from Hewlett-Packard for the purchase of computers.

There are currently nine staff members working at the facility. One more will be added in early January.

Photo by Tom Kleindinst



U.S. AMS employee Brad Amundson and WHOI's AMS Facility Assistant Director Bob Schneider work on the new facility in the McLean addition.

The facility will analyze seawater and ocean sediment by counting directly the number of carbon atoms they contain, according to Research Associate Ann McNichol, who will be responsible for preparing samples at the new facility. Traditional dating methods measure the beta-decays produced when radioactive carbon-14 atoms convert to nitrogen-14 with a half-life of 5730 years.

While older methods required a 220-liter water sample, the AMS method needs only 50 to 100 milliliters — the difference between a

large drum of water and a small glass.

The time it takes to analyze a sample will also be dramatically reduced with the AMS facility. Where traditional methods took up to two to three days, the AMS facility will take one to two hours.

Associate Scientist Glenn Jones of the Geology and Geophysics Department, who was largely responsible for WHOI being selected for the site, will oversee the laboratory.

Since accelerator mass spec-

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Peter Brewer to leave WHOI post

U.S. JGOFS planning office will stay

Senior Scientist Peter Brewer and his wife Hilary will leave the Institution in January after 23 years. Peter will become director of the Monterey Bay Aquarium Research Institution (MBARI) in California.

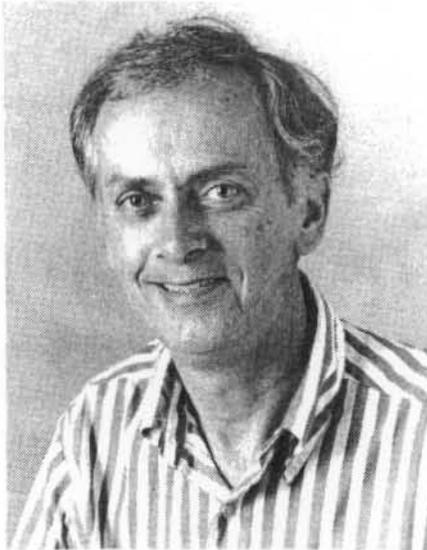
The U.S. JGOFS planning office, which Peter heads, will remain at WHOI under the direction of Senior Research Specialist Hugh Livingston.

The planning office serves as the central point for communications among federal agencies, scientists, and the international JGOFS program. The office produces a newsletter, writes proposals, holds steering committee meetings and distributes minutes of the meetings. According to Peter, Hugh has been assuming much of the day to day work of the planning office in recent months.

JGOFS began in 1984 with a workshop sponsored by the National Academy of Sciences. The 80 scientists attending the workshop concluded that the project was feasible and established a four-member executive committee and a 15-member steering committee to begin planning it. Peter has been involved in the study from the beginning, has served as president of U.S. JGOFS for the past five years, and will continue to do so for an unspecified time.

"Five years is a pretty long time

WHOI file photo



Peter Brewer

to survive as chairman," Peter said. "The planning papers have been written, the preliminary cruises are done. It's probably appropriate that there is a shift now, as we go into execution."

The projects's planned cruise to the equatorial Pacific, scheduled for Spring 1992, is still on track, Peter said, and the program is "thriving."

"I've been involved from the beginning at a very intense level," Peter said. "With the new position, I can't keep the same level of intensity, but I'll continue to be very interested and professionally involved in the science."

MBARI is a three-year-old research institution founded by David Packard that now employs a staff of about 60. Peter has been promised significant internal funding and has been given a mandate to greatly increase the staff, install new lab capabilities, and define the scientific mission. A new research vessel is at an advanced stage of planning.

One of the current focuses of the lab is ROV technology. Researchers there are remotely surveying the local area and have a live hook-up to the Monterey Bay Aquarium. Future projects may include a cooperative effort with WHOI in acoustic telemetry and a major role in the Heard Island acoustic experiment.

Like Woods Hole, Monterey Bay is home to several research organizations, creating a strong potential for cooperative research. Among the facilities in Monterey are Stanford University's Hopkins Marine Station, the aquarium itself, Moss Landing Marine Labs, a NOAA lab, and the U.S. Navy Post-Graduate School.

"It wasn't in my plans to leave Woods Hole," Peter said. "In many ways I'm sorry to be leaving, but this is a marvelous and unique opportunity. All the staff I've worked with here have been great people, and I expect to continue close associations with our many friends."

AMS Facility

Continued from page 1

rometry became a scientific tool in the early 1980s, demand for radio-carbon analyses using this method has steadily increased and now far exceeds analysis time available on the six existing facilities. The AMS technique gained public attention several years ago for its role in dating

the Shroud of Turin. The major scientific users of this international research facility will be the World Ocean Circulation Experiment (WOCE) and the Global Ocean Flux Study (GOFS). It is estimated that the WOCE project alone will require 2,000 samples a year.

When fully operational later this year, the AMS Facility at WHOI will have an annual budget of about \$1.8 million. It will be able to date about 4,500 samples a year, or ten to twenty times more than can be handled at a conventional carbon-14 laboratory.

Broadus makes connections with Korean oceanographers

Marine Policy Center Director Jim Broadus visited the Korea Ocean Research and Development Institute (KORDI) in November for the first in a series of workshops that will be part of a cooperative agreement between WHOI and KORDI.

"This is a good time to build this relationship," Jim said. "It's good for the Institution to have strong relationships with others around the world. KORDI is one whose star is rising."

The two institutions signed a "sister institution" cooperative agreement in July.

The waters surrounding South Korea, including the Sea of Japan and the Yellow Sea, are of tremendous geologic interest to U.S. scientists, Broadus said.

Jim also said KORDI researchers are interested in having American expertise as they think about what directions the Institute's marine policy program might take.

The workshop was held November 1-3 on Cheju Island. MPC helped plan the meeting and recruit international participants and also contributed some funding. Principal funding came from KORDI and the Korean



Jim Broadus (second from left) at a workshop sponsored by KORDI.

Ministry of Science and Technology.

The workshop focused on Korean policy. Among the recommendations that came out of it were: expanded export orientation; more open trade practices; enhanced scientific, R&D and educational efforts; new diplomatic initiatives; and a move toward much stronger environmental protection measures.

The South Korean government, Jim said, puts a greater premium on

ocean science than does the United States. Part of the reason is economic. South Korea derives seven percent of its total income from ocean-related industry, while the United States derives only two to three percent.

KORDI will produce a summary of the November workshop. A WHOI-KORDI steering committee meeting will be held this spring or summer, probably in Woods Hole.

Winter meeting held for Trustees and Corporation

The winter meeting of the Trustees and Members of the Corporation was held December 7 at MIT.

Prior to the main meeting, the trustees held smaller committee meetings. Committees, which play an advisory role in Institution affairs, include the Education Committee, the Ships Committee, the Development Committee, the Audit Committee, and the Executive Committee.

The Trustees and Corporation Members received a report on funding sources from Chairman of the Board Guy Nichols and one on

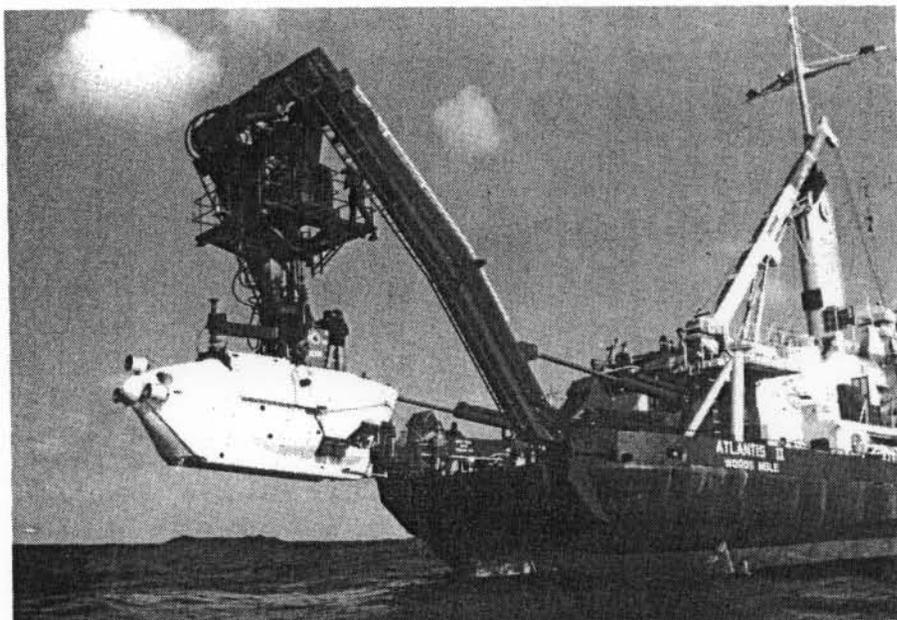
Institution progress from Director Craig Dorman.

Craig's report was similar to the one given to employees during his State of the Institution talks. He said the KNORR should be back in service by mid-1991. Recent appointments have been made to further the Institution initiatives discussed at last summer's management retreat: air/sea interaction and meteorology.

The Trustees and Corporation Members were invited to a series of walk-throughs at WHOI, which will be held on Friday afternoons next spring.

Vice President of the Corporation Charles Hollister reported to the trustees and corporation members that as of December 5, WHOI had taken in pledges of \$2,232,992. That amount is \$2,026,637 over last year's total of \$206,355 and did not include pledges made during December 1990. The Institution also received \$2,552,685 in cash as of December 5, which is \$155,867 over last year's \$2,396,818.

The science presentation, "Physical Oceanography in the '90s," was made by William Schmitz.



DSV ALVIN and ATLANTIS II

ALVIN records first all-female dive in Fieberling Guyot

After 26 years of diving, the deep submersible ALVIN is still making records.

On December 6, ALVIN recorded its first all-female dive.

The dive took place at the Fieberling Guyot, an underwater mountain about 500 miles off the coast of San Diego. It lasted seven hours and 20 minutes, and went to a depth of 640 meters (2,100 feet).

Women have come a long way since ALVIN was commissioned in 1964. At first, women were not allowed to do science on the submarine at all. The first dive with a female scientist took place in 1971. It was another 19 years before ALVIN got its first female pilot, Cindy Lee Van Dover, who began piloting ALVIN earlier this year.

Scientific staff on the December 6 dive were Cynthia Huggett and Elana Leithold, both of North Caro-

lina State University.

The dive was part of a three-week cruise to study the effects of ocean floor currents on the biological communities of the Fieberling Guyot. ALVIN is scheduled to make three trips to the Fieberling Guyot during its stay in the Pacific. The first took place in October and the third is set for June 1991.

Lisa Ann Levin of North Carolina State is chief scientist on the current cruise. WHOI participants are Lauren Mullineaux, Elizabeth Garland, and Andrea Arenovski. Lauren will be chief scientist on the 1991 cruise.

ALVIN carries a pilot and two scientists and makes about 175 dives a year to depths of 13,120 feet.

ALVIN and its support ship, the ATLANTIS II, will spend 1991 in the eastern Pacific working between Acapulco, Mexico, and Seattle, Washington.

Revelle receives National Medal of Science

Roger Revelle, an honorary WHOI Trustee and honorary Member of the Corporation, was one of 20 scientists to receive the National Medal of Science from President Bush this year.

Revelle, a professor of public policy at the University of California at San Diego, received the award for his work in the areas of carbon dioxide and climate modification, oceanographic exploration presaging plate tectonics, the biological effects of radiation in the marine environment, and studies of human population growth and global food supplies.

Revelle is one of two scientists associated with WHOI to receive the Medal of Science this year. Trustee Mildred Dresselhaus also received the award (see Newsletter, November).

JASON Project postponed

The JASON Project's planned trip to the Galapagos has been postponed.

The trip was originally scheduled for May 1991, but will now be held either in the fall of 1991 or the spring of 1992.

Before the trip goes ahead, several new broadcast sites have to be set up with studio equipment. Satellite time also has to be arranged, and other scheduling concerns have to be worked out.

The JASON Foundation's recent appointment of a new executive director should speed things along. Tim Armour, an administrator from the Boston area, has been selected to fill the position.

Druffel wins James B. Macelwane Medal

Associate Scientist Ellen Druffel was honored at the American Geophysical Union (AGU) Fall Meeting in December.

Ellen was one of three scientists to receive the James B. Macelwane Medal for significant contributions to the geophysical sciences by a young scientist of outstanding ability.

"Her ability to extract meaningful data from nature's imperfect record (is a) rare quality in today's compartmentalized world," said Peter Williams, a Senior Research Chemist at Scripps Institution of Oceanography. "Ellen's work will have permanent value and a significant impact on future research directions for studies on the marine carbon cycle. She deserves the encouragement and honor afforded by this award."

Williams presented the award to Ellen during a ceremony at the AGU conference. He is an organic geochemist and has collaborated with Ellen on past projects.

Ellen was given the award for her use of radiocarbon in studies of oceanographic and climatic changes.

"The use of natural and bomb-produced radiocarbon to detect, explain, and predict oceanographic and climatic processes has been, by and large, underutilized in the past," Williams said. "Ellen has done, and is doing, a great deal to remedy this."

Ellen came to WHOI in 1981 as an assistant scientist in the Chemistry Department, and was promoted to associate scientist in 1985. She received her master's and doctoral degrees from the University of California at San Diego.

In addition to the Macelwane Medal, Ellen's awards include the NSF Visiting Professorships for Women, the Mellon Study Award, the University of California, San Diego, Chemistry Teaching Award, the Loyola University Teaching Award, and the American Institute of Chemists Award.



WHOI file photo

Ellen Druffel

The AGU meeting was held December 3-7 in San Francisco. Over 60 WHOI scientists presented papers.

Staff Committee names new members

New members of the Staff Committee were announced at the committee's annual open meeting December 13.

The committee consists of eight members serving two-year staggered terms.

The new members for 1991 are

Ellen Druffel, Larry Flick, Kathy Gillis, and Lauren Mullineaux.

Continuing members are Larry Ball, Ken Bohr, Ken Peal, and Mary Jane Tucci.

The Staff Committee represents the concerns of staff members to the administration.

Donations requested for Noah Shelter

Maura Power in Shipping & Receiving is collecting donations for Noah's Homeless Shelter in Hyannis.

The shelter needs donations of toiletries such as tooth brushes, tooth paste and razors, health items such as tissues, vitamins, and cough drops, kitchen utensils, office supplies, and clothing such as socks, gloves, and thermal underwear.

They are also looking for volunteers to answer phones, provide transportation, serve dinners, and sort donations.

For a complete list of the shelter's needs or for more information, contact Maura at ext. 2412.

Oceanus moves to temporary quarters

The staff of *Oceanus* magazine has temporarily moved to the basement of Endeavour House during renovations to the Student Center.

The staff will remain in Endeavour House for about two months, during the most disruptive

parts of the renovation.

During the renovations, the lower level of the student center will be waterproofed and converted to new office space, the upper level will be refurbished, and a new entryway will be constructed.



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H. Schouten



Stephen M. Bollens
Postdoctoral Scholar
Education/Biology
Redfield 226
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Challenger
Ext. 2385
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Deborah Kelley
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G. Thompson



Peter C. Lemmond
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Clark 241B
Ext. 2490
B. Tuscholke



Lillian R. Lomba
Staff Asst. II-Floater
Personnel
Nobska
Ext. 2704
K. LaBernz



Bernard Simonelli
Security Guard
Facilities
Smith Lobby
Ext. 0
R. Craft

Promotions

Michael P. Bacon (Chemistry)
to Senior Scientist 11/18

Paul R. Bouchard (PO)
to Research Assistant III 11/05

Ralph A. Stephen (G&G)
to Senior Scientist 11/26

Tapes of benefits meetings available

The Benefits Office recently held information meetings on several benefits available to WHOI employees.

VHS video tapes of each of the three meetings are available to anyone who missed the meetings but would like more information. The three sessions discussed the tax deferred annuity program, health care open enrollment, and dependent care/child care subsidy.

To borrow a tape, contact the Public Information Office at ext. 3340.

Amount for computer loans increased

The Institution has increased the maximum amount for loans to employees for personal computers from \$1,000 to \$1,500. The payback period has been increased from one year to 18 months (39 pay periods).

The loans are interest-free and are available to full-time employees who have been employed by the Institution for at least one year. Only one loan per employee is allowed.

For more information or a loan form, contact the Controller's Office at ext. 2866.

Exhibit Center hours

The WHOI Exhibit Center will be open the following extra hours during the holiday season:

Sundays, December 23 and 30, noon to 4 p.m.

Mondays, December 24 and 31, 10 a.m. to 2 p.m.

Christmas Week, December 26 to 29, 10 a.m. to 4 p.m.

The Exhibit Center is also open Fridays, Saturdays and Mondays, 10 a.m. to 4 p.m. through December. After December 31, it will be closed to the public until spring. WHOI employees wishing to use the facility for visitors should contact the Public Information Office at ext. 3340.

Changes in purchasing staff

The Purchasing Department has had several personnel changes this year, and now includes the following people and their commodity responsibilities:

Mo Moniz, purchasing manager - ext. 2721 - contracts, subcontracts.
Ken Bohr, assistant purchasing manager - ext. 2374 - marine, mechanical, fuel, gases and metals.
John Powers, senior buyer - ext. 2373 - computers, computer supplies and peripherals, audio and video equipment, steward supplies.
Steve Ferreira, buyer II - ext. 2372 - electronic/electrical components, diagnostic equipment, diving equip-

ment, oceanographic instrumentation.

Sandra Sherlock, buyer I - ext. 2376 - scientific equipment and supplies, safety equipment.

John Wood, buyer I - ext. 3382 - fasteners, plastics, drafting and graphic supplies, O-rings, janitorial supplies, forms, water, office furniture and supplies, catering, liquors.

Laura Oxford, purchasing expeditor - ext. 2375 - books, publications, Omnet service, AGU service.

Jeanne Silva, staff assistant/receptionist - ext. 2371.

Dale DePonte, staff assistant - ext. 2664.

WHOI employees send package to Persian Gulf

Employees in the Purchasing Department got together last month to send a package to military personnel in the Persian Gulf.

Their effort was organized by Purchasing Expeditor **Laura Oxford**, who heard a request from Vietnam Veterans that people support the Desert Shield effort.

Laura posted a sign in the purchasing department and received donations of either cash or supplies from everyone there.

Among the items sent were

sunscreen, lotion, shampoo, soap, and certain types of cookies and candy. The package was delivered to the veteran's organization by Purchasing Manager **Mo Moniz**.

Laura says the Post Office can provide information on what types of items will survive being shipped, and said that she could also answer questions. **Laura's** extension is 2375.

Anyone wishing to send a card to a soldier in the Persian Gulf can send it to: 101st Airborne Division, APO, New York, NY 09309.

Women's Committee holds annual meeting

The Women's Committee held its annual open meeting last month to discuss its activities.

The committee has been sponsoring a series of wellness seminars for the past year. The next one, on the Effects of Smoking on the Non-Smoker, will be held January 8.

Judy McDowell announced the results of the climate assessment update sent out last August. She said most people were supportive of the Institution's approaches to equity

issues that were raised in the original 1988 questionnaire. The committee is helping to form standing committees to address other concerns.

A parental leave review will begin next month. A survey will be sent to other institutions to determine what types of benefits they offer.

The committee has also been holding a can and bottle drive to raise money for the Cape Cod Needy Fund. Contact **Rindy Ostermann** at ext. 2592 for more information.

Ship notes

ATLANTIS II/ALVIN

RV ATLANTIS II and DSV ALVIN departed San Diego, California, on December 2 on Leg XVIII of Voyage #125. The vessel returned to San Diego December 19.

The purpose of the cruise was to study the physical and biological effects at the benthic boundary layer of water flow over abrupt topographical features. Thirteen dives by DSV ALVIN were made to collect biological samples and turn around deployed instrumentation.

OCEANUS

RV OCEANUS departed Woods Hole December 6 on Voyage #229 on a cruise for AOP&E. It returned to port December 10.

The purpose of the cruise was to perform engineering tests and to evaluate a towed chemical tracer injection instrument and associated winch control systems.

OCEANUS will be at the WHOI dock over the Christmas holiday, but will not be opened to visitors because crew members will be away. To arrange a visit, contact the Port Office at ext. 2208.

KNORR

Work continues of the final upgrade of the KNORR at the McDermott Shipyard in Amelia, Louisiana.

EAGLE MAR

The EAGLE MAR is undergoing maintenance at MacDougall's Cape Cod Marine Service in Falmouth.

It will remain at the shipyard for the winter, and will return to Woods Hole March 31.

Safety Office offers advice on avoiding computer injuries

Safety Officer Eric Spencer offers the following information on computer injuries.

A number of employees have been having arm and wrist problems associated with working on computer keyboards. Apparently this is a widespread phenomenon, and a number of articles have been published on the subject. Many factors are involved, including the set up of the work station, posture, many more keystrokes per day compared to using a typewriter, chair selection, and stress. There are also a number of devices being sold that claim to alleviate the problems because they are "ergonomically" designed.

Many of the factors are under the control of the operator. The following are a list of recommendations Digital Equipment Corporation makes to both customers and employees:

* Take advantage of rest breaks to



move around and perhaps do simple muscle relaxing exercises.

* Place your feet flat on the floor or on a footrest.

* Adjust the seat height so that the angle between the upper and lower leg is slightly more than 90 degrees.

* The seat back should be set to provide support for the back so that your back is in a vertical position.

* The position of the wrists should be as straight as possible. Some operators have found a chair with arms is helpful. Others have received some relief from using a padded support for the forearms.

* The arms should be positioned so that the upper arm is vertical and the lower arm is horizontal or elevated slightly.

The Safety Office has a growing file of articles and booklets on this subject that employees are welcome to borrow or to read at any time. If you have found other means of relief, please let the Safety Office (Iselin, ext. 2242) know so it may be used to help others who have problems.

Facilities asks that waste oil be removed

The Facilities Department reports that it has been finding containers of waste motor oil on Institution property recently.

Because disposal of the contents requires special handling, it increases the Institution's operating costs.

The Town of Falmouth accepts waste motor oil at the landfill on Thomas Landers Road. They are equipped to dispose of oil in a safe and environmentally sound manner.

The Facilities Department asks that employees use the landfill and notify the Facilities Office if they see others leaving oil containers on WHOI property.

Parking revenues donated to local causes

Every summer since 1974, WHOI has opened its Dyer's Dock parking lot to the public on evenings and weekends to help alleviate the tight parking situation in Woods Hole.

The program is administered by the Falmouth Business Association, which collects parking fees and monitors the lot. The Institution receives proceeds from the business association after the attendants are paid, and has traditionally donated them to community groups and activities.

This year, WHOI and the Woods Hole Business Association donated \$1,200 to the Falmouth Public Schools and \$1,000 to the Woods Hole Foundation.

In previous years, the parking profits have also been donated to the

Woods Hole Community Association, the Woods Hole Women's Club, the Woods Hole Historical Collection, the Woods Hole Library, and the Falmouth Chamber of Commerce.

While the schools are free to use the donation in any manner they see fit, the Institution suggested that it be used to help fund special activities such as the revolving arts programs and field trips which might not otherwise be possible because of tight funding.

Funds donated to the Woods Hole Foundation are to be used in any manner the foundation sees fit.

In addition to opening Dyer's Dock for public access, WHOI allows Woods Hole residents to park in the School Street lot during the summer. No fee is charged to residents.