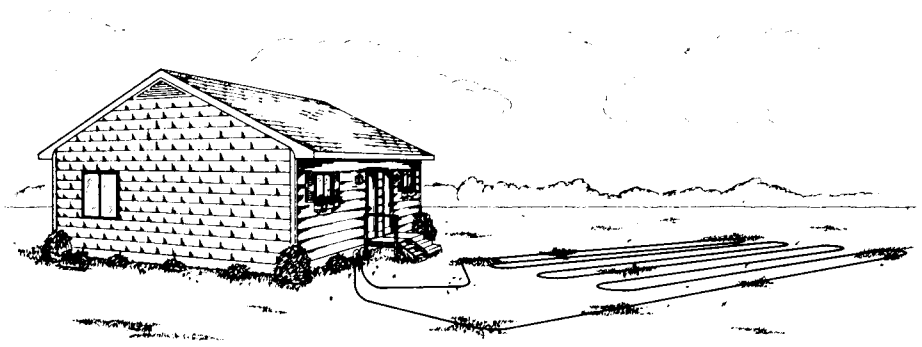
BROOKHAVEN BULLETIN
Vol. 36 - No. 7 February 19, 1982
BROOKHAVEN NATIONAL LABORATORY



Energy House heated with ground coupled heat pump. Water-filled pipes, which connect to the heat pump, are actually buried four feet underground.

Notes From Underground

Update On Heat Storage System

Three years ago, next to the BNL employees recreation park, a tract of land about the size of four ball fields was excavated for an experiment on underground heat storage systems. Based on what was learned in that study, a ground coupled heat pump was installed in a house on site at BNL and is being tested to determine its feasibility in a cold climate.

Principal investigator on the project is Philip Metz, in the Solar and Renewables Division, Department of Energy and Environment. The house in which the heat pump is installed is the old Arkansas Energy Conservation House, built six years ago to test better construction techniques and energy conserving ideas. In its new role, it's now called the Energy House.

As Metz explains, heat pumps work like refrigerators, only they can also move heat from outside to inside. Ordinary heat pumps are air-to-air systems, but the problem with using an air source heat pump to heat houses is that when outside temperatures are low, the heat pump efficiency and capacity are also low, just when the most heat is needed.

The key to the BNL project is ground coupling, a term coined by BNL researchers to describe using the earth as a heat source or heat sink. A water-to-air heat pump in the Energy House is hooked up to 500 feet of one and a half inch diameter polyethylene piping, filled with a mixture of water and anti-freeze, all of it laid out in a serpentine pattern and buried four feet underground.

Yard space is required for this configuration, says Metz, but vertical heat exchangers which require little land have also been tested. He says the optimum horizontal piping layout for the Energy House takes a plot of land about 30 X 50 feet, with the piping going in a serpentine pattern, three feet between the pipes.

The system was first tested during the winter of 1980-81. The results? It kept the house a cozy 72° F all season long, with no use of backup heating.

The main reason a ground coupled heat pump works so well, explains Metz, is that in the winter, the ground is usually warmer than outside air and the ground is insensitive to short cold spells. Also, since fluid is used as a heat transfer medium rather than air, the energy-consuming defrost cycle is eliminated.

On a recent day, the monitoring equipment in the house recorded the ground temperature at 35° F (about the minimum at this depth), the water/anti-freeze mixture coming into the house at 32° F, and after circulating through the heat pump, the fluid leaving the house at 27° F. The small temperature differential between incoming and outgoing fluid, typical of the system's severest test at this time of the year, is still enough for the heat pump to use in keeping the house at 72° F without assistance, according to Metz.

Data gathering continues this winter. For this second season of heating tests, a more efficient heat pump was installed. It's also smaller and therefore better matched to the house size.

Based on results to date, Metz expects the data, when completely analyzed, will indicate an improvement on last winter's tests. He also expects a seasonal performance factor (SPF) of 2.5-3.0. (SPF is the heat provided to the house for a season, divided by the amount of electricity purchased). In comparison, an electric resistance heating system has an SPF of 1.0; thus this heat pump system uses roughly a third of that electricity.

Once the feasibility of the ground coupled heat pump system is established, design guidelines for commercial application will be developed, based on this and other ground coupling experiments around the country.

Catalog Cutback

The reproduction and distribution of excess property catalogs and listings to individual users has been discontinued. Instead, the Excess Procurement Section of the Supply & Materiel Division has made a central screening area available in the Catalog Section at Building 211. This practice will result in substantial savings to the Laboratory. The area is open during working hours, and instructions on how to proceed are posted.

As catalogs or listings are received almost daily, employees are urged to actively screen for items required for use at BNL to avoid unnecessary outside procurement. The equipment and material obtained from excess sources is, in most instances, available to the Laboratory at no charge other than the cost of shipping, packing, crating and handling.

Library Bulletin

Beginning February 16 the Research Library is participating in a test program with SUPERINDEX. SUPERINDEX is a computerized retrieval system to provide scientific data from encyclopedias, handbooks and reference works. Contact your departmental Librarian or the Research Library for further information.

How's Your Color Sense?

Seen red lately? Maybe you've been feeling in the pink instead. Watch out. Tomorrow you might turn green with envy, which could trigger a plunge into the blues.

These figures of speech are familiar to us all. Whether or not we actually use them, we instinctively accept this matching of moods to particular colors.

And there is good reason for the correlation, according to Al Muller, chemist in DEE's Division of Metallurgy and Materials Sciences. Color psychology has been a long-time avocation of Muller's.

He is a member of both the American Society for Photobiology and the Inter Society Color Council. The latter is an organization of professionals from all fields, who are interested in using color in their work. At their annual meetings, people divide into subgroups to discuss specific topics. Muller belongs to Section 33 — human psychological response to color.

"The human body has evolved over a million years under sunlight, which contains the full spectrum of light," says Muller. "If someone is exposed to a radical change in spectral distribution, it can interfere with endocrine functions.

"For example, if a plant is grown under red light, it will sprout a lot of leaves, but stay short. Under only blue light, it may grow tall, but with fewer leaves. Obviously, color is not something you fool around with."

On the other hand, Muller points out, deliberate use of color can have a desired effect.

"Generally speaking, longer wavelength colors like red, orange and yellow are stimulating, while shorter wavelengh colors like blue, violet and indigo tend to be calming," says Muller. "Ever notice how red and orange are favorite colors in restaurant decor? They stimulate the appetite."

Just as interior decorators dabble in the subtle suggestiveness of colors, European clinics use color psychology on patients. Muller describes blue rooms for hyperactive people, pink for the depressed and watercolor painting therapy for all.

Backing up this kind of treatment are documented cases of behavior affected by color. Muller cites the case in which an entire class of young school children were habitually hyperactive and unruly. He says, "The classroom was on the south side of the building, but because it was so bright all the time, the curtains were always kept closed. No daylight, or full spectrum of color, came in. Instead, the room was lit with reddish-orange fluorescents. When the lights were changed to full-spectrum fluorescents, things calmed down."

In the last few years researchers from the Massachusetts Institute of Technology have established a scientific basis for color psychology via a physiological mechanism. Muller calls their work "an exciting discovery of a new function of the eye."

As he explains it, the retina of the eye is linked to the pineal gland, one of the endocrine glands. Various colors reaching the eye initiate nerve impulses from the retina, which in turn trigger the pineal gland to secrete hormones. These hormones then activate other endocrine glands, such as the adrenals, thyroid and gonads. A particular color will activate one gland, another color, another gland, and so on.

Mort Rosen

Al Muller

Muller says other researchers have shown that rats grown under amber-colored sodium vapor lights develop larger, stronger bodies and enlarged adrenal glands. Ironically, sodium vapor lights are being installed to help deter crime on city streets. They are much more energy efficient than ordinary tungsten lamps, which is why they are so favored, but unfortunately, the light may be in the wrong wavelength range.

Although use of the wrong color can be potentially bad, use of the right color can be life-saving, as in the case of newborn premature babies who suffer from hyperbilirubinemia, according to Muller. Premature newborns have undeveloped livers, and bilirubin can build up their blood, making them jaundiced. For the last five or six years now, the standard treatment for babies with high levels of bilirubin is to put them under blue light. "Although psychologically calming," explains Muller, "blue light is very energetic. A blue photon has three electron volts of energy, while a red photon has half that energy. The blue photons are so energetic, they photochemically break down the bilirubin." It's now a common sight in hospital nurseries to see babies basking under blue fluorescent lights.

Muller has picked up much of what he knows about color from years of Inter Society Color Council meetings and extensive reading on the subject.

He first became interested in color when he worked in the solid state physics group at BNL, studying color centers in various crystalline materials exposed to radiation. Then in the late 1960's he was part of a bio/med/engineering group that explored different uses of ionizing and non-ionizing radiation.

Since then, he has not formally done any color research, although in the power transmission project on which he now works, he has had a chance to exercise his fondness for color.

The project's superconducting cables are wound with 12,000 feet of dielectric tape. Muller says the tapes had to be a certain hue to get the right amount of light transmission for inspection and taping procedures.

"I chose a very pretty gold, which had just the right hue," he says. "But can you imagine how 12,000 feet of red colored tape might have affected the people winding it?"

—Mona S. Rowe

Reports Available

The following reports are now available to the Laboratory staff and to affiliates of the DOE, AUI and NRC. Others may purchase the reports from the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Rd., Springfield, Virginia 22161. Staff members should call Ext. 5068.

51142
A Process Model of the U.S. Pulp and Paper Industry. D.A. Pilati, J. Chang, F.T. Sparrow, S.O. Howe, C. Balzer, B. McBreen

51230
Storage in Residential Solar Total Energy Systems. R.W. Leigh

51284
Photovoltaic Energy Technologies: Health and Environmental Effects Document. P.D. Moskowitz, L.D. Hamilton, S.C. Morris, K.M. Novak, M.D. Rowe

51289
Regional Issue Identification and Assessment Program (RIIA) Issue Paper 2. Atmospheric Long-Range Transport Lead Laboratory Methodology. R.E. Meyers, L.I. Kleinman, T-Y. Li, R.T. Cederwall

51290
Regional Issue Identification and Assessment Program (RIIA) Issue Paper 3. Selected Institutional Aspects of Energy Development in the Northeast. F.C. Bryant, Editor

51299
Evaluation of the Conservation Potential of a Refit Energy Management System (Using a Power Line Subcarrier) in a Large, High-Rise Apartment Complex. H.E. Hirschfeld

NUREG/CR-1863
NUREG-51316
Properties of Radioactive Wastes and Waste Containers. Quarterly Progress Report July - Sept. 1980. N. Morcos and A.J. Weiss

51318
Proceedings Workshop on Inhalation Chamber Technology. Held at BNL Oct. 16-17, 1978. R.T. Drew, Editor

51325
Technology for the Development of High-Efficiency Oil-Fired Residential Heating Equipment. Final Report. D.W. Locklin and H.R. Hazard

51326
Socioeconomic Impacts of Time-of-Day Pricing by Electric Utilities: A Case Study of Philadelphia Residential Customers. L.J. Roberts

51327
Oxidant Air Pollution: Estimated Effects on U.S. Vegetation in 1969 and 1974. P.D. Moskowitz, W.H. Medeiros, S.C. Morris, E.A. Coveney

51329
Semiannual Report for the Period Apr. 1 - Sept. 30, 1980 of Work on: 1) Superconducting Power Transmission System Development 2) Cable Insulation Development. Division of Advanced Technology Applications, Accelerator Department.

NUREG/CR-1924
NUREG-51355
FRANTIC II - A Computer Code for Time Dependent Unavailability Analysis. W.E. Vesely, F.F. Goldman, J.T. Powers, J.M. Dickey, J.M. Smith, R.E. Hall

NUREG/CR-1979
NUREG-51356
Probability Based Load Criteria for the Design of Nuclear Structures: A Critical Review of the State-of-the-Art. M. Shinozuka, B.R. Ellingwood, P.C. Wang, C. Meyer, Y.K. Wen, S. Kao, M.L., Shooman, A.J. Philippacopoulos

51359
Long-Range Oil and Gas Supply Methodology: Proposed Reformulation. E.A. Cherniavsky

51361
District Heating: Air Quality Considerations and the Clean Air Act. P.D. Moskowitz, T. Carney, F.W. Lipfert

51362
Chemical/Hydrogen Energy Systems. Annual Report Jan. 1 - Dec. 31, 1980. A. Mezzina, M. Bonner, T. Botts, J. D'Acierco, C. Fredrickson, F. Hill, G. Kissel, J. McBreen, W. O'Grady, M. Rosso, G. Strickland, C. Yang

51372
An Iterative Algorithm for the Volume Integral Method for Magnetostatics Problems. J.E. Pasciak

51375
Bacterial Analysis of Water and Sediment Samples. A.J. Francis, H.L. Quinby, G.R. Hendrey

51377
AGS 20th Anniversary Celebration. N.V. Baggett

51380
Neutrino Oscillation Workshop. N.V. Baggett

51385
On the Description of the Turbulent Fragmentation of a Puff in the Turbulent Flow with the Large Reynold's Numbers. A. Levin

51386
Remarks of the Description of the Statistical Features of the Turbulent Diffusion of a Puff. A. Levin

51387
Final Report of the Radiation Heating Task Force. G. Bozoki, D. Brown, G. Bunce, G. Danby, H. Foelsche, J. Jackson, J. Kaugerts, D.I. Lowenstein, A. Prodell, K. Robins, W. Sampson, A. Soukas, A. Stevens, R. Stoehr, J. Weisenbloom

BNL 51286
Fleet-Car Market PENetration Simulator "CPEN" User's Guide. R. Weil

BNL 51287
Polymer Cement Geothermal Well-Completion Materials. Final Report. A.N. Zeldin, L.E. Kukacka

Aboard the research vessel DOLPHIN, members of Oceanography Explorer Post No. 50 used a trawl to obtain samples from the ocean's depths. Here, they pay careful attention to Terry Whitledge as he uses an indicator to measure the angle of the wire that pulls the net. With this information, they can calculate the depth of the net in the sea.

Youths Explore Oceanography

Lee Conway prepared boiled conch. Terry Whitledge contributed calamari a la Roman. And one member of Oceanography Explorer Post No. 50 brought fish sticks. The occasion was the Post's January 19th meeting to which everyone brought a different seafood dish to become acquainted with the ocean's abundance.

This meeting also marked the Post's first anniversary. Exactly one year earlier, BNL became the group's official sponsor, oceanographer Whitledge was named Post Advisor and associate scientist Conway signed on to assist him. Like other Explorer Posts, No. 50 is a career-oriented, co-ed group which operates under the auspices of the Boys Scouts of America.

Right now, the Post consists of 12 young adults, all of whom are interested in oceanography. Two of their three monthly meetings are usually held in DEE's Oceanography Building, 318, and are devoted to examining different aspects of the field. Speakers may lecture on such topics as Food Chain Dynamics, The Geology of Long Island, or Seamanship & Navigation. Or members may analyze samples of ocean life for chlorophyll, salinity or nutrient content.

The third meeting of the month is held at the BNL pool where the Explorers have a chance to practice their swimming skills, as well as to get to know each other better. "Most of them come from different schools," says Conway. "At the pool, the barriers are down, so when it comes time for a trip, they know each other pretty well."

One of the Explorer's most ambitious trips was last spring when they spent three days in Woods Hole, Massachusetts. There, they developed their camping skills and broadened their understanding of their field by visiting the Woods Hole Oceanographic Institution, the zooplankton ecology laboratory, the submersible vessel ALVIN and the research vessel KNORR.

Last October, the Explorers spent a day at sea on Dowling College's research vessel DOLPHIN. Thanks to associate advisor Charles Frey, who is affiliated with Dowling, the youths had a chance to work on the ocean. "The idea was to show them the tough part as well as the fun," says Whitledge, "so when they got seasick, I tried not to feel too bad. Some were really scared at first, but most recovered enough to collect samples from the ocean at four different depths, at four locations. Those are the samples we analyze at our meetings."

All these activities demand lots of personal time from Whitledge and Conway. Is it worth it? Both men think so. As Whitledge explained, "It is time consuming, but I enjoy kids that age and some things more than make up for it. Last year's president is now studying marine biology at Brockport (SUNY) and another member is taking oceanography at Stony Brook. When this happens, it seems like you're really doing something."

Conway appreciates the fact that the learning process works both ways. "Before I can teach them about methods and equipment I studied in graduate school, I have to relearn some of it myself. It's a great review."

For both men, the program has had one unforeseen benefit. As Whitledge put it, "You feel like you're not getting older quite so fast, trying to keep up with the young ones."

Fresh Fruit On Sale

To finance field trips, Oceanography Explorer Post No. 50 is selling citrus fruit from Texas:

- TexaSweet Oranges - $8.75/crate (40-60)
- Ruby Red Grapefruit - $7.75/crate (18-24)

Orders are now being taken for the next shipment. To order, call Terry Whitledge, Ext. 2945, or Lee Conway, Ext. 7629, by March 10. Your order should arrive on March 20.

CREF Values

February	51.21	March	52.85
April	52.39	May	52.56
June	51.94	July	51.19
August	48.26	September	$45.89
October	47.61	November	$49.61
December	$48.33		

January $47.49

ENGINEERS:
PIONEERING AMERICA'S REVITALIZATION

NATIONAL
ENGINEERS
WEEK
FEB 21-27

Last Two Events: Drama and Dance

Drama and dance will be featured in the two final events being sponsored by the BNL Afro-American Culture Club in celebration of Black History Month. Tomorrow night, Saundra Dunson-Franks will give a one-woman performance in *"Hats"*, a biographical tribute she wrote about Harriet Tubman. On Friday, February 26, the *Bill Mackey Dance Theatre* will perform Afro/ethnic, jazz and modern dance. Both presentations will take place in Berkner Hall at 8 p.m.

Harriet Tubman, who lived from 1820 to 1913, was an escaped slave who freed over 300 people as a conductor on the Underground Railroad. She also served as a Union Army Intelligence Agent and associated with John Brown, Elizabeth Cady Stanton and Frederick Douglass. Saundra Dunson-Franks *becomes* Harriet Tubman as she reminisces about her experiences in a sobering and captivating performance. Produced and directed by Walter Dallas, the show has received much national acclaim since it was first performed in 1977. Tickets to *"Hats"*, at $6 each, will be available at the door.

The *Bill Mackey Dance Theatre* is a new and rising Boston-based group. Mr. Mackey is a performer, a choreographer and a faculty member at Harvard-Radcliffe. Among his credits are Broadway performances in the revival of "Guys and Dolls" and in

Saundra Dunson-Franks as Harriet Tubman

"Odyssey" with Yul Brynner, and an appearance in the movie "Freedom Road" with Kris Kristofferson and Muhammad Ali. Mr. Mackey has also choreographed "House of Bernarda Alba", based on the play by Spanish playwright Frederico Garcia-Lorca. The Dance Theatre won recent acclaim for their presentation of this original piece on television. Tickets cost $8 each and can be purchased at the door.

Tickets for both performances are also available from Berthel Becton, Ext. 4432; Mary Durham, Ext. 7981; Renee Flack, Ext. 3316; Michele Henderson, Ext. 4303; and Deidre Seymore, Ext. 5037.

A List of Veggies

If you're wondering what to grow this year in your home garden, why not refer to the 1982 list of vegetable varieties recommended for home use in New York State? The list, published by the Department of Vegetable Crops at Cornell University, is available from the Cooperative Extension Association of Suffolk County, 246 Griffing Avenue, Riverhead, NY 11901 (727-7850). The 37 different vegetables on the list were selected because they are well adapted to New York conditions, of relatively high quality, dependable, and resistant to some insect and disease problems. They also have a fairly long harvest period.

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NYC Train Trip

The Hospitality Committee is planning a group railroad trip to New York City on Wednesday, March 3. Departure will be at 7:55 a.m. from the Patchogue LIRR station. Round-trip fare for adults is $3.50; children under six years ride free.

Reserve a ticket by sending your fare through the U.S. mail to P.O. Box 322, Upton, New York 11973, no later than Thursday, February 25. Please make checks payable to "Brookhaven National Laboratory," and put the date of the trip, your BNL life number, and your telephone number on the check. Your tickets will be given to you on the train. Refunds will be made only if cancellations are received by the Monday morning preceding the trip.

I.B.E.W. Meeting

Local 2230, I.B.E.W. will hold its regular monthly meeting on Thursday, February 25, at 6 p.m. in the Knights of Columbus Hall, Railroad Ave., Patchogue. There will also be an afternoon meeting at 2 p.m. for shift workers in the Union office at 31 Oak Street, Patchogue. On the agenda will be regular business, committee reports and the President's report.

Select A Student

Completed applications for the 1982 Summer Student Program will be available for review in the Office of Academic Relations, Bldg. 460, 2nd floor, as of February 22. Guidelines regarding the selection of summer students have been distributed to research department offices. Staff members are invited to review applications and to select students to work under their supervision from June 7 to August 20.

Kids At College

Saturday Science... and More is a laboratory program held at SUNY, Stony Brook, for children in grades 1 through 6. It is sponsored by the Special Education Program and the Science and Mathematics Teaching Center of the university.

The purpose of the program is to help children develop an inquisitive scientific attitude. Towards this end, teachers help students make observations, formulate questions and design experiments for such courses as Exploration in Chemistry, Intermediate Patterns in Math and Primary Electricity.

At this writing, there were still a few places open in the session beginning April 24, which offers Balancing to children in grades 1-3 and Kitchen Physics to those in grades 4-6. Each course lasts three weeks and there is a $20 fee. For more information about this session, or to place your child's name on the mailing list for future sessions of *Saturday Science... and More*, call Ms. Martinez at 246-8652.

Secretaries Note

Following a successful luncheon meeting on February 3, arrangements have been made for officers from Professional Secretaries International (PSI) and its Queen Anne Chapter to be at BNL on Thursday evening, March 11 to discuss establishing a PSI Chapter at BNL. It will be a dinner meeting in the Cafeteria. Send your check in the amount of $7.00, payable to Saga Food Service, to Fran Ligon, Bldg. 460 no later than Friday, March 5.

Att: Mariners

Beginning February 25 at 8 p.m., the Moriches Bay Power Squadron will offer a free boating course entitled "Outboard, Inboard, Sail." The course, which is open to the public, will be held on 10 consecutive Thursdays at the old Center Moriches High School, Main Street, Center Moriches.

This course is recommended for both new and experienced sailors since it will include an introduction to the Unified Inland Rules, a new set of regulations which became effective last December and which are applicable to all of the inland waters of the United States. These new rules are quite different from the old ones, although they are similar to those used in international waters.

The U.S. Power Squadron also offers courses to its members on such topics as celestial navigation, sail, and engine maintenance. For more information on the free course or on the squadron, contact Bob Lindgren at 878-2687.

Karate Classes

Karate enthusiasts of all ages and levels meet in the gymnasium every Friday at 7 p.m. for classes organized by the Karate Club. Participation is open to employees and members of their immediate families at a cost of $15/month for each student.

Instruction in the karate form known as Kempo Tae Kwon-Do is under the direction of 2nd Degree Black Belt Joe Garcia, who has been in the martial arts since 1965.

Prospective students may contact Whitey Caiazza at Ext. 2913. Spectators are always welcome.

Arrivals & Departures

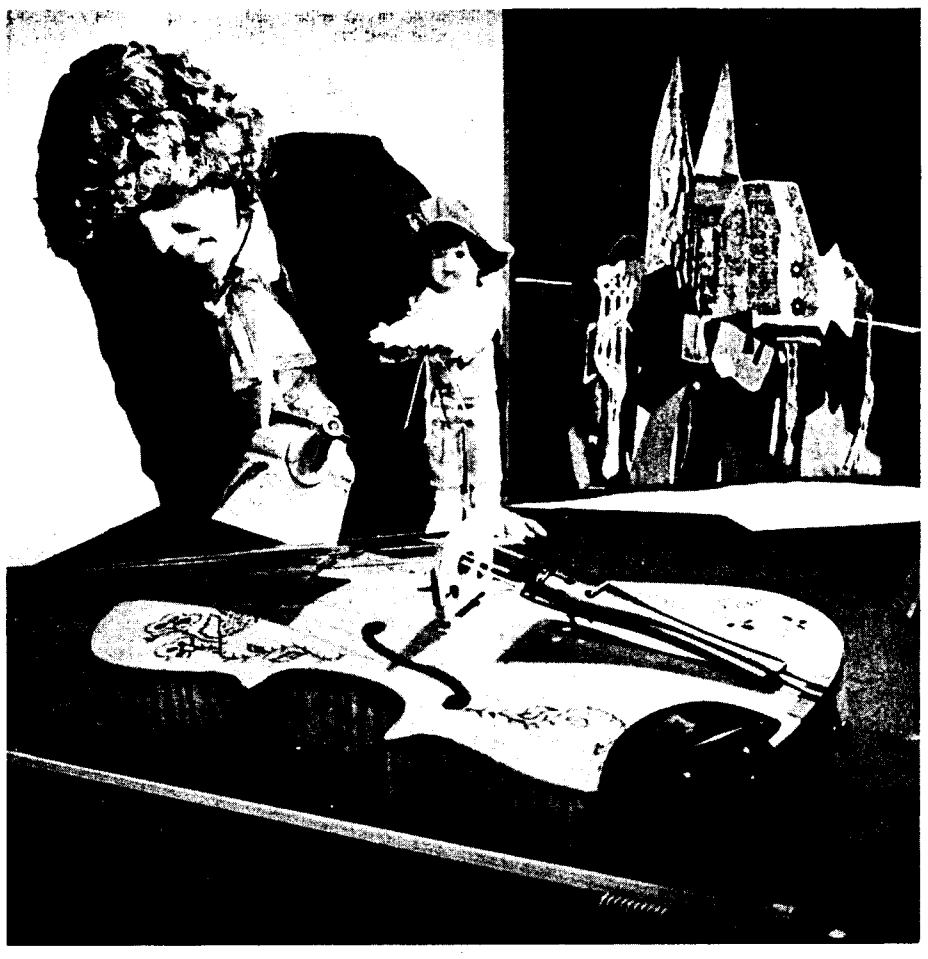
Arrivals

Tanjore S. Balganesh ..... Biology
Donald B. Harris ..... Energy & Env.
Miriam H. Rafailovich ..... Physics
Kenneth W. Ryan ..... Tech. Info.

Departures

Maureen E. Burns ..... Applied Math.
Harriet Fadem ..... Nuclear Energy
Frederick B. Growcock ..... Nuclear Energy

Crafts On Display



Doug Humphrey

While preparing displays for the second BERA Members Craft Exhibit, chairman Becky Bishop examines a pottery teapot created by Gene Ferreri and a porcelain doll fashioned by Honor Dexter. The violin in the foreground was carved from wood by Pat Gilleeny and the tapestry (right rear) is the work of Toni Gilleeny. In all, 21 craftspeople are showing original quilts, stained glass macrame and other works at the exhibit, which opened Wednesday evening in Room B of Berkner Hall. The show will run through Wednesday, March 3. Hours are 9 a.m. to 5 p.m., weekdays only.

Motorcycle Club

A meeting of the BNL Motorcycle Club will be held at the Recreation Building on Monday, February 22, at 5:15 p.m.

In attendance will be members of the Long Island Road Race Club.

Refreshments will be served.

Cooking Exchange

South American specialties will be featured at the next meeting of the Cooking Exchange on Wednesday, February 24, in the Recreation Building. Such recipes as chicken and corn salad from Chile, and potatoes with cheese sauce from Peru, will be demonstrated and sampled.

Meetings are held from 12:30 to 2:30 p.m. and are open to employees and their families. There is a charge of $1.00 per person at each meeting and babysitting is provided at 50¢ for each child.

For information call Mary Daum, 744-1898, or Ruth Fernow, 928-8465.

Bowling

Pink League

H. Keeley rolled games of 161/176, D. Johnson 165, E. Kristiansen 169, R. Rosati 169.

White League

The Portsiders are in first place. High games were bowled by V. Manzella 223, J. Roesler 206, T. Erickson 201.

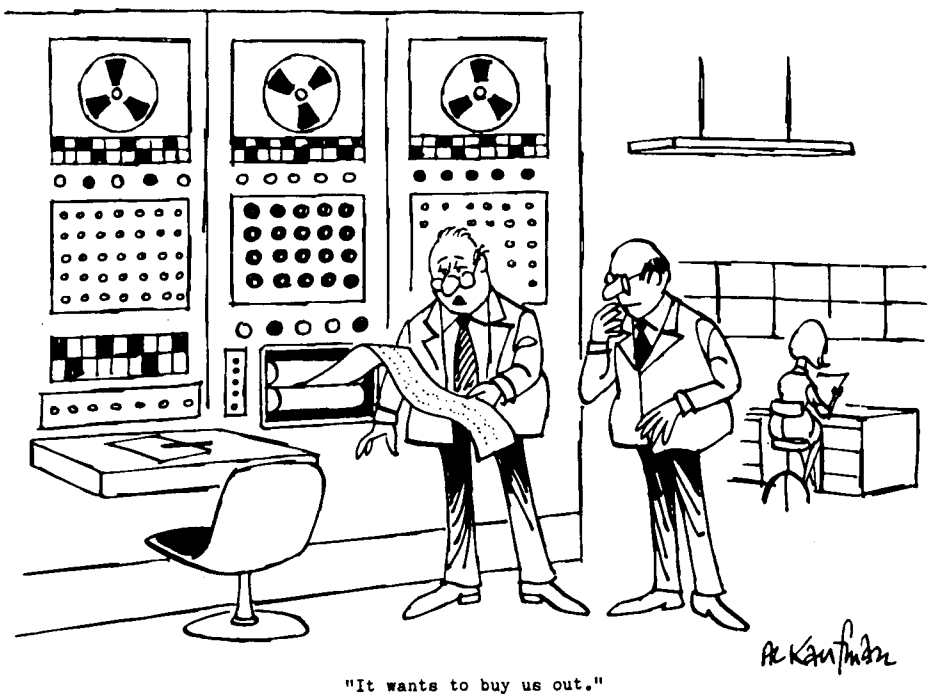
Red & Green League

R. Wiseman bowled games of 202/209/207 for a 618 scratch, 660 gross series (4th straight week of 600+ scratch games), R. Larsen 225/204, G. Meinken 219, J. Connelly 214, R. Jones 213, M. McKenna 212, L. Musso 200.

Cafeteria Menu

Week Ending February 26, 1982

Monday, February 22		
Cream of tomato soup	(cup)	.60
	(bowl)	.70
Sausage onion & pepper omelet w/hash browns		1.70
Ham and noodle au gratin		1.75
Hot Deli — Eggplant parmesan hero		1.85
Tuesday, February 23		
Lentil soup	(cup)	.55
	(bowl)	.65
Pork and cabbage crisp on toasted Chinese noodles		1.70
Salisburg steak & 1 veg.		1.75
Hot Deli — Pastrami	(bread)	1.75
	(roll)	1.85
Wednesday, February 24		
Vegetable beef soup	(cup)	.55
	(bowl)	.65
Beef stew on egg noodles		1.80
BBQ spare ribs & black eyed peas		1.80
Hot Deli — Roasted top round of beef	(bread)	1.75
	(roll)	1.85
Thursday, February 25		
Old fashioned bean soup	(cup)	.55
	(bowl)	.65
Veal pattie parmesan and ziti		1.75
Grilled pork chop & 1 veg.		1.80
Hot Deli — Sandwich steak w/peppers and onions	(bread)	1.80
	(roll)	1.90
Friday, February 26		
Fish chowder	(cup)	.60
	(bowl)	.70
Shrimp & fries	(tax incl.)	2.00
Beef chow mein over rice		1.70
Hot Deli — Baked ham	(bread)	1.75
	(roll)	1.85



"It wants to buy us out."

Classified Advertisements

Autos & Auto Supplies

68 VW - recond. eng., new clutch, new paint, very clean. Must be seen, $1875. 281-2431.

76 TOYOTA COROLLA - wagon, 5 spd., a/c, am/fm, cass., luggage rack, excel. cond., $2,550. 281-8274.

76 VW - Dasher, 4 dr., auto., $3,000. Marj, Ext. 3396.

15" RIMS - off 69 Buick, $7.50 ea. or both for $10 or trade for 5 hole Chevy, Van. Tony, Ext. 3198.

62 CHEVY PARTS - or complete car; front & rear windshields for 62 Chevy, best offer. Joe, Ext. 2556

RADIAL - new Peerless S/B, 7R78X15 ww. $30 and worth every cent. Sue, Ext. 7235.

BRAKE ROTORS - w/bearings, two, for 74 Ford Torino, $25; auto mech., 6' screw jack stand, like new $50. Dan, Ext. 4987 or 698-7322 after 6 p.m.

79 FIREBIRD - 6 cyl., pb/ps, T-Tops, am/fm cassette, excel. cond., new tires, good mpg, white, $5,200. 929-3448 (6-10 p.m.).

46 HARLEY DAVIDSON - Knucklehead, completely chopped, much chrome, show bike, immaculate, must see, $5,000 firm. 281-6164.

71 HONDA - 750cc, Yoshimira Header, super bike bars, many extras, excel. cond., must sell, $1,050. 281-6164.

73 CADILLAC - DeVille, 4/dr sd., am/fm, all power; new trans., new starter, new driveshaft, needs minor repair, $600. 281-7720.

FORD FLATHEAD PARTS - 49-53, 3 spd. manual car transmission, Mallory distributor, Weiand dual carb manifold. Tom, Ext. 4084 or 878-1060.

69 VOLVO - 142S, for parts, new radiator, muffler. Engine has many reusable parts. Suzanne, Ext. 2978 or 289-6982.

72 DODGE DART - custom 225, ac, good radial tires, new brakes, excel. running cond., $825. Ext. 5332.

73 OLDS - excel. running cond., am/fm stereo, 8-track tape, full power. Ext. 4835 or 289-9811 after 6 p.m.

68 VOLVO - 4 dr., very good cond., rebuilt eng., 30,000 mi., many new parts, $1,600. 878-1920.

60 AUSTIN HEALY - Bugeye Sprite, new motor & suspen., body good, many spare parts, $1,000. Augie, Ext. 5385 or 325-0594 eves.

74 PONTIAC - Catalina, 4 dr., hdtp., ps/pb, a/c, good body, needs some mech. work, $750. M. Rosen, Ext. 2382.

FM STEREO - Pioneer, 8 trk. mount, (2) 20-07 speakers, $45. Ext. 2483.

75 MERCURY - Bobcat, good working cond., 4 sp. trans., $800. 968-7213 after 5 p.m.

TRIUMPH - TR2,3,4, compl. front suspen., $100; rear-end, $75; MGA 1500 motor, $75. Augie, Ext. 5385 or 325-0594 eves.

72 H/D - FLH Police Special, h/d, 1200 cc, all stock, $3,000. John, Ext. 4973 or 798-3766.

AUTO ROOF CARRIER - 37"x37"x5", new, $18. Jag, Ext. 5080 or 751-1884.

78 TOYOTA - Celica CP, 32,500 mi., 5 sp., a/c, ps/pb, am/fm, excel. cond., $5,450. 588-3230.

66 SCOUT - 4x4, 154" cu, runs good, needs some work, $425. Ken, Ext. 2350.

TIRE - one, sz. H-78-15 on rim, $15 firm. Inan, Ext. 3293.

RIMS - Chevrolet 14" wheel, $ ea. Charlie, Ext. 4758.

78 LT CAMARO - silver/grey, 305 V-8, a/c, a/t, ps/pb, p/w, instr., am/fm, s/s Michelin snows, A-1 mech. cond., $4,600. Ext. 7766 or 757-2645.

75 OPEL - wagon, 53,000 mi., excel. cond., auto., a/c, red, garaged, one owner, $2,250. 751-7489.

64 CHEVY - Pick-up, 4 sp., Corvette trans., 6 cyl., mechanically excel., needs minor work, $500. 281-1862 or 399-1157.

76 DELTA 88 - Royale, hdtp., 4 dr., fully equipped, low mi., asking $2,750. Ext. 2423 or 2173.

71 DODGE - Van, 13-200, 6 cyl., auto., short wheel base, windows all around. Joe, Ext. 7961 or 878-2655 eves.

76 DATSUN - 710, new tires, batt., excel. cond., 30 mpg. Bermudez, Ext. 7953 or 282-3117.

65-66 MUSTANG BUMPER - orig. rear, no dents, $20. Saxon, 929-8105.

75 OLDS - Cutlass Supreme Sports Coupe, auto., 260 V-8, stereo, cassette, swivel front seat, powder blue, white int., immaculate. Must see, $2,800. Ext. 3381 or 286-1024.

Boats & Marine Supplies

FIBERGLASS BOAT - 20', $400; Dory 25' wooden double-ender, $50. Steve, Ext. 2023.

GARVEY - 22'x7'6", self bailing cabin, console, glassed, no eng. Tom, 286-9659 after 5:30 p.m.

Yard Sales

CONTENTS OF HOUSE - moving. 744-6628; 17 Friendship Dr., Rocky Point.

Miscellaneous

FREEZER - $200; b/w TV, needs repair, $25; shag rug, $40; girl's bike, $45. Paul, Ext. 4156.

LOVE SEAT - tan/brown plaid upholstery, $75. 286-0384.

BEDDING - 2 sets, 4-pieces, DeLux Shifman twin size, gd. cond., $75 per set. 475-8658 after 6:30 p.m.

KITCHEN TABLE - white oval formica and two wood tresel benches in v.g. cond., asking $50/set. 281-0360.

CAMERA - 35mm SLR Minolta SRT 102; 50mm 1:17 lens & filter. Shutter 0-1000; Vivitar flash. Asking $175. Ext. 3284 at noon or 281-0360 after 6 p.m.

SKIS - Hexcel SLR 195 cm, Salomon 555 bindings with brakes, $100. Karl, Ext. 4192.

DINING SET - Drexel table, w/leaves, 4 chairs, china closet, pecan wood, $275. 929-4942 eves.

COUCH - 2 lg. sections, blue, like new, $250; Sears sewing machine w/cabinet, $60; freezer, Gibson, 3 cu. ft., frost free, excel., $250; kitchen set w/six swivel chairs, $200; card table, custom made seats, 8, $100, firm. 289-5704 after 5:30 p.m.

COUCH - Ital. prov., olive green, 2 marble tables, lamp, excel., asking $600. 981-1692.

BLAZERS - wool & velvet, fully-lined; suits, blouses, sz. 16, excel. cond. Ext. 3331 or 289-8155.

DRYER - $50; jewelry display, $10; 5 stationary shelves, $5.00 ea.; glass display, $15.00; 2 large desks, $30. Luis, Ext. 3762 or 281-0678.

WASHER - Westinghouse, 9 yrs. old, $10. Russ, Ext. 3059 or 744-7242.

8-TRACK PLAYER - complete with speakers. Joe, Ext. 2556.

HANGING BATH - cast iron sink, faucet, legs, towel bars, $35; 1 hp. jacuzzi deep well pump, 2 stage, completely overhauled, $95. 924-3565.

SKIIS - Elan, 150 cm, Saloman 444 bindings; Caber boots, sz. 8, used 4 times, $50. 286-2565 after 4 p.m.

CASSETTES - blank BASF, chrome ferrite FeCr & metal, reasonable, Ext. 2521 or 928-8379 eves.

GAS OVEN - and counter top range w/cabinet unit built in, $200. Georgia, Ext. 2772 or 286-8869.

TYPEWRITER - IBM model C, $225. Ext. 2268 or 727-5194.

FIREWOOD - not split, 3 cords oak, you pick up $200. 744-9832.

WATER PUMP - Teel, 3/4 hp.; 30 gal. water tank. excel. cond., $250. 878-4664.

BABY STUFF - car seat, play pen, walker, toilet seats, clothes, blankets, mobile. Call for appt. 928-6944.

MOPED - Batavus, $300. Steve, Ext. 2023.

SCONCES - wrought iron; 4 light hanging lamp, $40 takes all. Lois, Ext. 4904 or 929-4753 after 5.

FM RECEIVER - Fischer 400 Stereophonic, excel. cond., walnut cabinet, brushed brass bezel, $75. John, Ext. 4680/5329.

1925 KITCHEN TABLE - Carved wooden pedestal bottom, w/drawer, brown/red porcelain top w/leaves, $100. 744-3574.

C.B. TOWER - 40', tilt, Wilson "Y" quad antenna, rotor, cable & many other extras, $150; all wood credenza, beautiful for dining rm. or liv. rm.; black Japanese Silkie chickens. 751-5539.

CAR RACING SET - Aurora, AFX, GT (plus) cars, new pwr. transformer, extra tracks, hardly used, like new. Mark, 744-8063 days.

ELECTRIC WALL OVEN - 24" Hardwick, $100; propane camping heater, Primus catalytic, 4,000 BTU, $20. Saxon, 929-8105.

FIREWOOD - split, seasoned oak, 4'x16'x18", $110 delivered. 924-4284 or 924-3919.

FURNITURE - contemp., good cond., liv. rm. couch, 2 chairs, dinette set. Franz, Ext. 7103 or 744-3235.

SKIIS - Zebra by Volkl, 195 cm, Nordica Astrail Pro boots, sz. 9, excel. cond., $100. Ext. 2012.

CAMERA OUTFIT - Nikon Nikkor, 2.8 lens, 135 mm, flash, camera bag. Asking $275. Jim, Ext. 4452.

SONY BETAMAX - SL5600, $600. Peter, Ext. 4662 or 698-3822 eves.

IMITATION FUR COAT - boot length, new, sz. 14. 924-6051 after 6 p.m.

FREEZER - Upright, lg., home. style, $100. 924-6751 eves.

KITCHEN CABINETS - Birch, 25 doors, 8 drawers, excel. cond. Sally, 751-1401.

FIGURE SKATES - child's, sz. 4, black, never used, $5. Charlie, Ext. 4758.

ANTIQUE BRASS LAMPS - two, 39" w/shades, excel. cond., $50/pr. firm. Bob, Ext. 4651.

FRANKLIN WOODBURNING STOVE - Sears, heavy cast iron, excel. cond., $125. Ext. 2012.

PEGBOARD PANELS - Transite, 4'x8'x1/4", have 350 on hand. Cost $48 ea., asking $22 ea. 286-1522 eves.

MEN'S SKI BOOTS - Rieker, black, sz. 9, w/boot tree, good cond., $20. Pat, Ext. 2452.

MICROWAVE OVEN - redwood table, 4 benches, umbrella. 981-1692.

FREEZER - G.E., upright, excel. cond., hardly used, $150. Rose, Ext. 5263.

CANDLE STICK HOLDERS - pewter, never used, $20. Ext. 3431.

ELECTRONIC THERMOMETERS - brand new, $10. Charlie, Ext. 3935 or 325-0968.

LIVING RM. SET - emerald green couch, 2 burnt orange chairs. Paul, 878-1486.

COLOR TV - Sears, 15", just been repaired, $100. Joe, Ext. 4661.

MAPLE SECTIONAL - couch, chair, rocker, $175; corner table, $40; lamps, $30 & $40; milk can; patio Redwood couch, 2 chairs w/cushions, $125; patio table, awning top, 2 benches, $100; collectibles, over (30) 78 rpm records, 40's, Glenn Miller, Ink Spots, Goodman, Harry James, $25; metal desk, $25; Singer sewing machine, sturdy oldie, $100; post lamp, $50; wash stand, $40; Ethan Allen rocker, pine, $100; dining rm. table, 3 leaves, 8 chairs, hutch, $1,500. 929-8642.

ANTIQUES - organ, $200; ice box, $75; chair, $40; glassware; kerosene lamp. 929-8642.

BIKE - Fuji, Grand Tourer, 12 sp., like new, accessories, must see to appreciate, reasonable. Ron, 878-1731.

BARBER CHAIR - 1940's, porcelain, great conversation, $150; elec. barber pole, $120. Mike, 669-9482.

BABY CARRIAGE - $25; tub, $2; changing table, $20; diaper pail, $3; toaster, $5; bed lamp, $10; winter boots, $10. Leaving. 282-3117.

COLOR TV - Sony, 17", $95. Ext. 3503.

Real Estate

Real Estate advertised for sale or rent is available without regard for the race, color, creed or national origin of the applicant.

For Sale

RIVERHEAD - mobile home, McCleods Park, 10' x 60', 1 bdrm., utility rm., l/rm., mod. kit., $10,000. 821-1799.

SHOREHAM - Heights Park, approx. 3/4 acre wooded plot. 744-0047 after 5 p.m.

WADING RIVER - wooded level acre in Clarendon Homes area, 10% mortgage avail. Taxes $175 yearly. 929-4173 or 929-6015 eves.

For Rent

APARTMENT - 1 b/r, l/r, dining area, kitchen, cooking gas, oil heat not included. $325 mo., incl. water/elec. 588-1889.

POCONO'S CHALET - near Lk. Wallepaupack, skiing nearby, indoor pool, $110/wk. end. 289-2159 after 6 p.m.

ROOM - furn., share kitchen, lv. rm., bath, food plan avail. $250/mo. incl. util. Roy, Ext. 4664 or 744-8779.

WADING RIVER - furn. room in priv. house, near Wildwood State Park & priv. beach, quiet indiv. only, no cooking priv., $45/wk., references. 929-4180.

MILLER PLACE - fully private, furn. studio w/kitchen & bath, $300/mo. incl. all. Linda, 473-3840.

RIDGE - 3 bdrms, 5 min. to Lab, wooded area, owner pays all util., lease required, $450/mo. Ext. 3430.

Car Pools

MASTIC - Paying rider needs ride from American Physical to Mastic, 5 p.m. Marie, 924-5533.

PARR VILLAGE - need ride three evening each week. Eileen, Ext. 4949.

GREENLAWN AREA - need 2 more drivers for existing car pool. Mark, Ext. 3258.

ELWOOD - E. Northport area, 2 drivers needed for 5 man car pool. Fred, Ext. 4407.

Wanted

HOUSEMATE - 2 b/r condo, Holtsville, 5 appl., $225 incl. all util. Female please. Ext. 3199 or 475-6622 evenings.

DEHUMIDIFIER - in good working cond. Louisa, Ext. 4207 or 286-2251.

MOTORCYCLES - bent, broken, any age or cond. Kevin, 281-8031.

RECORDS - orig. movie sound track to Rocky, Rocky II, Superman, Star Wars, (mint). Ext. 3397.

GOOD HOME - with lots of yard space for 1 yr. old Husky/Terrier, spayed female. 689-8685.

PLASTIC EGGS - from Leggs panty hose. Ed Pluta, Ext. 2957.

FRENCH DOORS - single or double, any size. Campbell, 286-3675.

TAILIGHT - for 76 Audi Fox, pass. side, plumbers "B" tank, reas. 585-5870.

IGNITION POWER PACK - 1970 Johnson, Evinrude 115 or eng. good for parts. Hank, 286-9659 after 6 p.m.

PAN AM TICKET - 2 for 1, will pay going rate. J. Powell, Ext. 2440

355 REAR END - 5 lug, 10 bolt, back cover for 1971 Dodge van. Joe, Ext. 7961 or 878-2655 eves.

TRAINS - Lionel, American Flyer, accessories, any cond. brings good price. Carole, Ext. 3362 or 924-4097 eves.

BICYCLE - 10 sp., 26-27 in. frame, men's type, repairable O.K., reasonable price. Bill Sanchez, Ext. 3848.

AMBITIOUS PEOPLE - $200-$300/mo., 6-8 hrs./wk. 698-5861 after 7:30 p.m.

PROFESSIONAL PHOTOGRAPHER - to do family photo, must be good and reasonably priced. Sharon, Ext. 3513.

CAMPBELLS SOUP - labels, send to F. Chandler, Bldg. T-89. (For St. Mary's School, E. Islip).

ROOM OR APT. - inexpensive, to share near SUNY, BNL, Port Jeff., etc. Mike, Ext. 3043 (W-F).

Lost & Found

LOST - gold earring, in area of Bldg. 179. Ext. 5138.

Services

Services are listed as a courtesy to BNL employees. They are neither screened nor recommended by the ***Bulletin.***

AUTOMOTIVE REPAIRS - tune-ups, Lab discount. Glenn, 281-7873.

HOME IMPROVEMENTS - carpentry, roofing, masonry, painting, complete, int./ext. Free estimates. 281-0360.

HOUSE CLEANING - and/or babysitting. Hours flexible, experienced, can provide refs. Cathy, 281-0360.

CARVING KNIVES - sharpened on a flat stone, $10 per knife, a razor edge. Dave, Ext. 4755.

PLUMBING AND HEATING - Lab discount. John, 654-8189.

TYPING SERVICE - reasonable rates. Pam, Ext. 7108 (8:30-5:00 p.m.) or 744-7048 after 5:30.

HOUSE PAINTING - int./ext., pro. quality materials, insured. Bob, 289-7657 after 6 p.m.

TILE SETTERS - ceramic-quarry-tile, no job too small. Free est. 475-6460.

TAXES - prepared by tax consultant, your home or mine. Reasonable. John, 732-2472.

INCOME TAX - exper. preparer, very reasonable rates. Bill, 821-9081.

FIRESIDE CHIMNEY SWEEPS - fireplaces, wood, coal & oil flues, dustless removal. $10 off thru Feb. 28, 1982. Bill, 584-6425.

LIMO SERVICE - for proms, weddings, airport, all occasions, luxury chauffered. Roy, Ext. 4664 or 744-8779.

HOUSE RENOVATION - & repairs, painting int. & ext., wallpaper hanging, reliable & reasonable, free estimates. 929-4180.

INCOME TAXES - prepared by professional accountant, very reasonable rates. Bob, 286-5829 weekends, evenings.

PIANO LESSONS - highly experienced, proven results, specialize in beginners. 286-8119.

HOUSE CLEANING - and/or babysitting, hours flexible, experienced, refs. avail., college student. 286-8119.

CHEMISTRY TUTOR - high school level (regents & general), very experienced. 286-8119.

FIRE/BURGLAR ALARMS - equipment only or installed, free survey. Custom Systems, 399-3806.

SMALL APPLIANCE REPAIRS - vacuums, typewriters, heaters, sewing machines, etc., No. Patch. 654-3900.

Classified Ad Policy

Deadline is 4:30 p.m. Friday for publication Friday of the following week.

1. The Brookhaven Bulletin's classified section may be used only by active and retired Laboratory employees.
2. All items for sale or rent must be the advertiser's property.
3. Ads for material acquired for resale in association with a full or part-time business cannot be accepted.
4. Ads for the sale or trade of firearms will not be accepted.
5. Ads not carried because of space restrictions will be held for publication in the next issue.
6. Ads are run only once and must be resubmitted if they are to be repeated. One ad per person per week.
7. **Property for sale or rent cannot be accepted on this form. Special Real Estate Ad Forms are available at the office of the Brookhaven Bulletin, Building 134.**

☐ For Sale: Autos & Auto Supplies ☐ For Sale: Boats & Marine Supplies ☐ For Sale: Miscellaneous ☐ Car Pools ☐ Lost & Found ☐ Services ☐ Wanted ☐ Free

Please print your ad below in 15 words or less using one word per block. Include name and phone number to call.

Note: The following must be completed for your ad to appear.

NAME (Please Print) .....

Employee's Signature ..... Life No. ..... Ext. .....

Send to: Brookhaven Bulletin, Building 134 (Ext. 2345).