BROOKHAVEN BULLETIN
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BROOKHAVEN NATIONAL LABORATORY

Danish Prefab House
To Showcase Modular Building

Say "prefabricated" or "modular" to prospective homeowners, and they will think of a mobile, trailer home. And many won't consider it because such homes are often thought of as cheap, leaky eyesores with a railroad flat floor plan. The government of Denmark was persuaded by BNL's Department of Applied Science (DAS) to change such American preconceptions by donating to the U.S. Government a prefabricated modular house that is attractive and well-designed. This affordable ($70,000 without land and foundation) and energy-conserving home is now being erected at BNL.

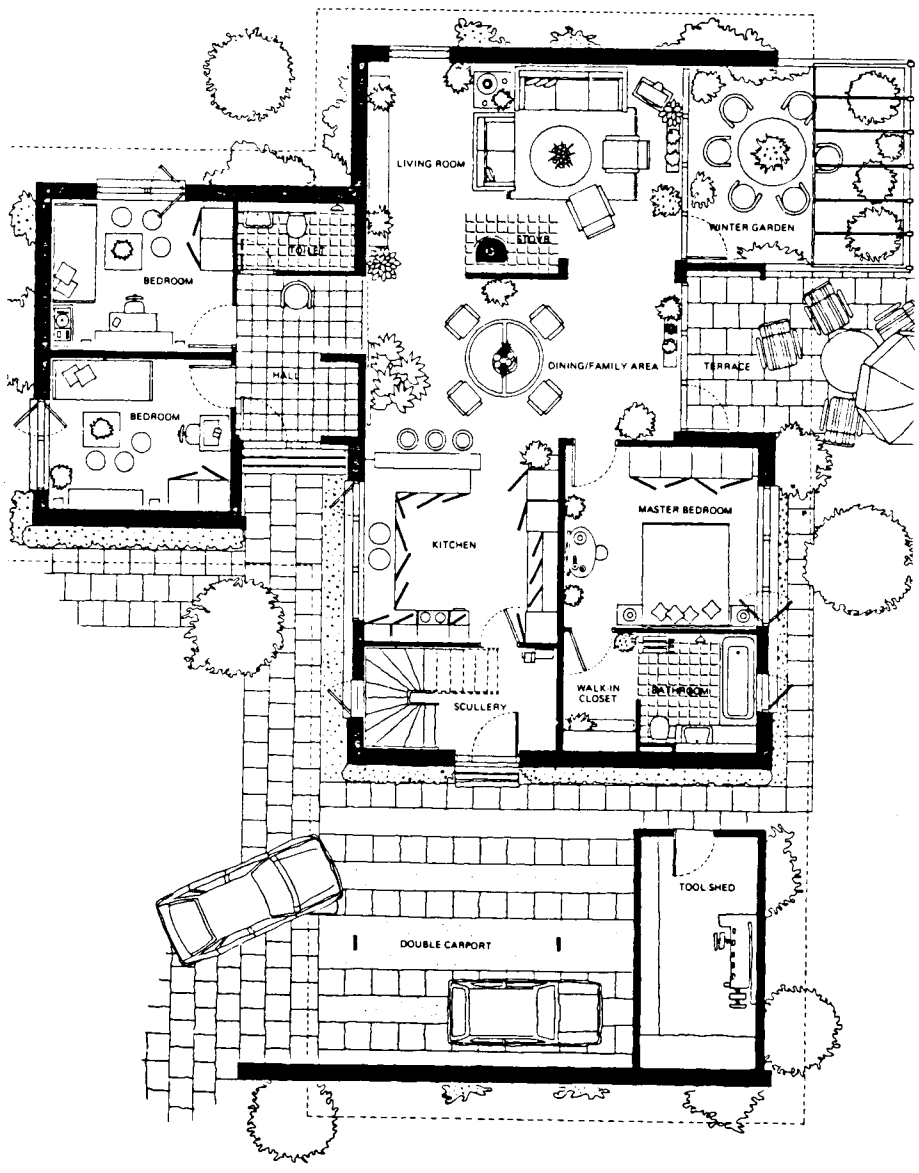
Five Danish construction workers, their foreman and the tools of their trade arrived on site on March 12. The modular elements and prefabricated units were delivered to BNL from March 13 through 19. The Danes began putting the house together on a prepared site in the apartment area on March 19. By March 24, the house will be erected.

The remaining plumbing and electrical work will then proceed inside the house. The crew will also install cabinets, wardrobes, carpets, brick facing and tiles, and they will paint the interior. Finally, Danish interior designers and landscapers will complete the house and grounds in the style of a typical home in Denmark. In Europe, the work usually takes about three weeks and requires approximately 660 hours of labor, excluding foundation work.

The house was designed and prefabricated by Hosby Huse A/S of Denmark, a 25-year-old international company that manufactures eight types and more than 50 models of affordable, energy-conserving modular homes in Denmark. Though novel for the U.S., such housing is commercially available in Europe from several manufacturers.

"The overriding consideration of U.S. manufacturers of prefabricated homes is purchase price, not aesthetics or energy expenses," says Ralph Jones of the Architectural & Building Systems Division (A&BSD) of DAS. "In Denmark, aesthetically pleasing, energy-efficient homes are being accurately built in the controlled environment of the factory by a steadily employed workforce.

"Similar results are much harder to achieve when building homes in the field," continues Jones, "though this is the construction method for most houses in America. In building a house in this country, we take a group of construction workers who haven't necessarily worked together before and are not employed year-round, give them tools that are not necessarily maintained or the proper ones for the job, leave them raw materials that must be precisely cut and assembled, and have them work no matter what the weather. Our system of building houses can be improved, and one thing we can consider is prefabrication."



The Danish house is a 1530-square-foot, L-shaped, modular building of typical, contemporary Danish design. The floor plan features an open living room/dining room area, a master bedroom and bath separated from two smaller bedrooms and their common bath, a scullery off of the kitchen, a separate "winter garden" greenhouse, a terrace, a double carport and a detached tool shed. The ceiling and roof are designed so that the second story can be used as living space.

The Danish house is 80% prefabricated. The floor, external and internal walls, ceiling and roof are composed of prefabricated wooden panels and other elements. The bathrooms, for instance, are prefabricated as units with all fixtures and piping installed at the factory.

The house is highly insulated, resulting in minimum heat loss. Mineral wool insulation having a resistance to heat flow value (R-value) of 21 is used in the external walls, the ceiling insulation is rated R-30, and the roof has an R-value of 28. The windows are installed as panels at the factory and built of mahogany wood and triple layer, thermo-glazing.

The temperature is controlled by individual thermostats and a day/night timer control. A woodstove or optional fireplace sits in the living room for additional heating. In Denmark, the house is normally supplied with a baseboard hydronic heating system and an oil- or gas-fired furnace. The BNL model will feature new radiative panels of Danish design that are now commercially available in this country. The mechanical ventilation system includes an air-to-air heat exchanger and a built-in heat pump, which utilizes the heat in the exhaust air to supply energy to the hot water system.

The Danish house will demonstrate advanced house-building technology, as well as further cultural exchange between Denmark and the U.S. It is the first of possibly several demonstration houses from other countries in a proposed international housing village at the Lab.

An official opening will be held on May 21 when the Danish Minister of Housing, members of the Danish consulate in New York, representatives of DOE and the Lab, and American home builders will be invited to inspect the house. At that time, other products of Denmark will be on display. After the ceremonies are over, Jones and Walter Loss, also of A&BSD, will monitor the house to find out how energy efficient it is and why.

"Because energy is scarce and expensive abroad, Europeans have been working longer on the problem of building affordable, liveable, energy-conserving housing," explains Loss, "and one of their solutions is prefabrication. European home-building technology is about 30 years more advanced than ours, and we can benefit from their experience."

— Marsha Belford

Forsyth Heads New Branch

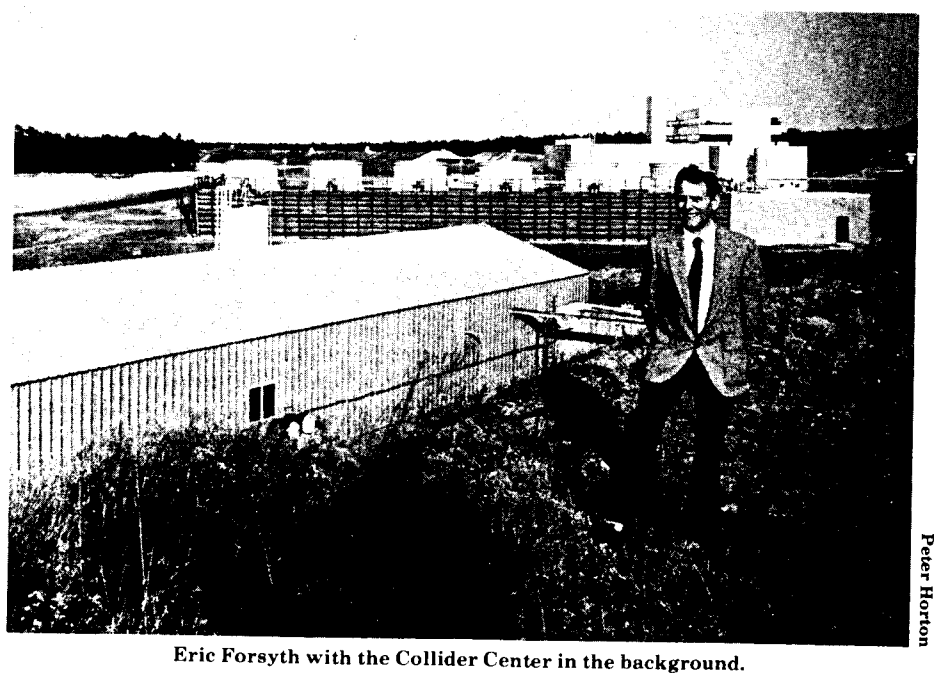
In anticipation of possible large projects such as a booster for the AGS and the Relativistic Heavy Ion Collider (RHIC), High Energy Facilities is making sure that a management and engineering team is all ready to go. Associate Director Paul Reardon announced recently the formation of a new branch, namely, Technical Projects, to develop uniform management procedures for such projects. These procedures would also be applicable to AGS programs, the Accelerator Development (AD) Branch and the Accelerator Physics Branch.

Reardon also announced that Eric Forsyth would head the new branch, as well as retain responsibility for the Division of Advanced Technology Applications, home of the Power Transmission Project.

In brief, Technical Projects will create a management and engineering structure to handle input on basic machine design and magnet design from the other branches of High Energy Facilities, e.g., the cryogenic system design and complete magnet assemblies for RHIC from the AD Branch.

Specifically, Technical Projects will install the hardware and provide budget and scheduling control, as well as ensure engineering coordination, acceptable quality, inspection and record keeping. Conventional construction and engineering design for subsystems to complete a facility will also be done by this branch.

The new group will set up shop in the Collider Center later this year.



Peter Horton

Eric Forsyth with the Collider Center in the background.

Health Seminar

A Wellness Seminar on the Safety Belt Law will be held at noon on Wednesday, March 27 in Berkner Hall. A representative from the County Executive's office will be present to discuss the safety belt legislation, show a short film, and answer questions on seat belt use.

It's Sugaring Time

Sugaring is a ritual of spring. This is the time of year when, if you had a stand of maples, you might be tapping their sap to make that prized golden syrup for sweetening pancakes, basting a ham, or topping an apple dumpling.

Several BNL employees follow the ritual each year. This spring has been particularly good for Walter Kane, Department of Nuclear Energy, and his wife Margaret, who tap maples on their farm in Kent, Connecticut. They have been going up on weekends and occasional weekdays to keep up with the flow.

Maple syrup is commonly made from the sap of the American sugar maple, explains Kane, because it contains about twice as much sugar as other maples. Even then, sugar maple sap is only about two per cent sugar. To concentrate the sweetness and the maple flavor, the sap must be boiled down. It takes about forty gallons of sap, or a season's yield from three trees, to make one gallon of syrup. Depending on the weather, the Kanes make anywhere from 40 to 145 gallons each season.

Peter Wanderer, Accelerator Development Branch, is involved with an even bigger operation. Wanderer and his wife Judy, with their three children, go up to Cambridge, Vermont, to help his in-laws, who have nearly a thousand maple trees on their dairy farm. On a good year, they make about 500 gallons of syrup.

The trees are tapped from late February through March and even early April, when the combination of freezing nights and warm, sunny days causes the sap to flow repeatedly between the roots and the crown of the tree. Sap flow usually occurs in "runs" lasting for several days, followed by days of inactivity.

Tapping is done by drilling a hole into a tree, putting in a spout, and hanging a bucket on the spout. One variation, a contribution from modern technology, is the use of plastic tubing to collect the sap and, with T connectors and a progression of bigger lines, bring it to the sugar house for boiling.

For years, Wanderer's family used buckets and a horse-drawn cart to collect the sap. Now they use plastic tubing. The Kanes still put up buckets, but collect them with a tractor.

In the sugar house, the sap is poured into a large pan, called an evaporator, a portion of which is placed over a wood fire. It takes about three hours for the sap to go from one end of the pan, through a labyrinth of deep sections, to the other side, all the while concentrating until it reaches the correct density that is specified by law. The process generates a tremendous amount of steam, which has a slight maple aroma, says Kane.

When the syrup comes out, it's cloudy and must be filtered to remove precipitates. Then it is graded by color, density and flavor into the following categories: U.S. Grade A Light Amber, called Fancy in Vermont; U.S. Grade A Medium Amber; and U.S. Grade A Dark Amber. Anything darker, called Grade C in Vermont and U.S. Grade B everywhere else, may not be sold retail.

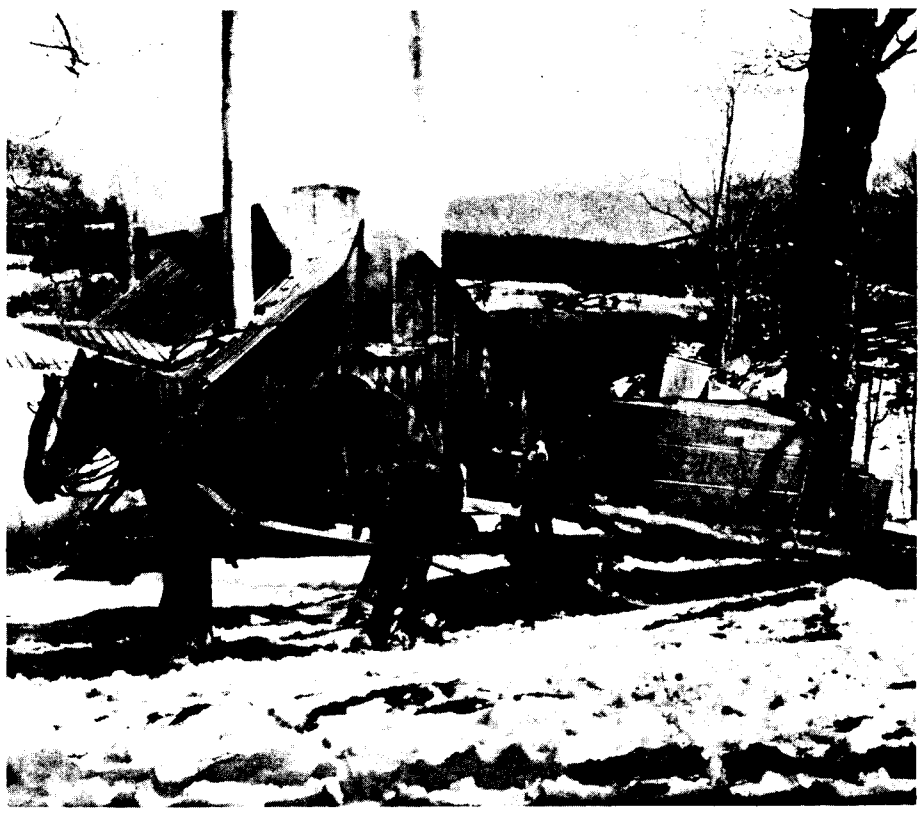
Every run is different and every season is different, says Wanderer. In general, though, the sap darkens through the season. The Fancy grade, made from early runs, is the lightest and has the least flavor. Most lovers of maple syrup prefer darker grades for more intense maple flavor.

Maple syrup is occasionally made from red, silver and Norway maples. Kane says people at one time tapped black birch trees to produce a sarsaparilla-tasting syrup.

Here on Long Island, Woody Glenn, AGS Department, taps the 15 or so Norway maples in his yard. Long Island has warm winters, making it less than ideal for sugaring, but Glenn does it anyway "just for fun." Because he uses Norway maples, Glenn has to concentrate the sap about twice as much as if he were using sugar maples. He starts the boiling outdoors, then finishes the job on the kitchen stove. This year, he began tapping trees at the end of January and by early March had ended up with three gallons of syrup, which his family uses throughout the year.

The Kane and Wanderer families produce much more syrup, most of which they sell, but they, too, consume several gallons a year. "We're especially big on pancakes," says Wanderer, who admits to buying a bottle of Mrs. Butterworth's once for amusement. "There was no comparison, of course," he adds.

—Mona S. Rowe



A horse-drawn cart is the traditional method of bringing sap to the sugar house, as shown in this picture taken by Judy Wanderer at her family's farm in Vermont.

The standard bucket used to collect sap, like this one on the Kane farm in Connecticut, is topped with a hat to keep out bark, snow, and an occasional squirrel.

Patent Awarded

Meyer Steinberg and **Peter Fallon**, both in the Department of Applied Science, were awarded U.S. Patent #4,463,210 for an invention relating to the production of chemical feedstock from biomass, especially wood.

With the advent of the energy crisis and the realization of the generally limited nature of oil and natural gas supplies for conversion to energy or petrochemicals, numerous efforts were begun to develop methods to utilize domestic resources such as coal and wood as substitutes for scarce and uncertain oil and gas supplies. Coal is attractive because the U.S. has huge natural deposits. Wood is not only abundant, but also renewable.

Steinberg and Fallon invented a process for producing ethylene, benzene and carbon monoxide from particulated biomass such as wood by reaction with methane at a temperature of from 700°C to 1200°C, at a pressure of from 20-100 psi for a period less than 10 seconds. For best product yields, the optimum parameters are 900°C to 1000°C for a reaction period of from 0.2 to 5 seconds at a pressure of 30-60 psi.

The conversion process is followed by rapid cooling to temperatures under 300°C to stabilize the products.

Although the invention is described with particular emphasis on wood, it is applicable to biomass in general, such as cellulosic products and agricultural waste.

Surprisingly, the inventors have found that the process yields over 20% ethylene and 12% benzene together with more than 45% carbon monoxide, with apparently no net consumption of methane.

Peter Horton

An international group met at Brookhaven on March 13 for discussions on the flash hydropyrolysis of coal with the Process Sciences Division, Department of Applied Science. Meyer Steinberg and his Process Science group are leaders in the field of flash pyrolysis of coal and biomass for direct conversion to synthetic fuels and chemical feedstocks. Sitting, from left, are Takafumi Kawamura of Nippon Steel (Japan), Martin Garey of Rocketdyne, Rockwell International Corp., Meyer Steinberg of BNL, and Peter Fallon of BNL. Standing are Yves Muller of Gaz de France, Alastair Tait of British Gas Corp., Alessandro Terzani of SNAM (Italy), Marc Meyer of Gaz de France, Muthu Sundaram of BNL, and Dan Kahn of Rocketdyne.

Arrivals & Departures

Arrivals

James B. Calcanes ..... Instr.
George Y. Markovits ..... DAS
Zohreh Parsa ..... HEF

Departures

This list includes all employees who have terminated from the Laboratory, including retirees:

Hugh C. Campbell ..... Reactor
Arnold Levin ..... DAS
Joseph J. Shonka ..... S&EP

Don't Rush It

Every year, valuable time and energy is lost when growers try to get a jump on the season. Often what they grow has to be ripped out and started again when conditions are right. And conditions are right when the soil temperature is about 40°F. Use a common stick-type indoor-outdoor thermometer, selecting a shady spot to get an accurate reading. Use a pencil to make the hole and then pack the soil around the thermometer.

Attention Visitors

The International Hospitality Committee of New York City invites visiting foreign scholars and their families to be guests at a concert at Alice Tully Hall, Lincoln Center, on Monday, April 15 at 8 p.m. Performing will be Carmit Zori, the Naumburg Award-winning violinist from Israel. Carmit Zori made her U.S. debut with the Philadelphia Orchestra in 1978 and has appeared on several occasions with Zubin Mehta and the New York Philharmonic.

Foreign visitors working at the Lab may obtain tickets by calling the Office of Scientific Personnel, Ext. 3338, by Tuesday, March 26.

NYC Train Trip

The Hospitality Committee is planning a group railroad trip to New York City on Wednesday, April 3. Departure will be at 7:55 a.m. from the Patchogue LIRR station. Round-trip fare for adults is $5; children under five years ride free.

Reserve a ticket by sending your fare through the U.S. mail to BNL, P.O. Box 322, Upton, New York 11973. Please do not send cash. Checks or money orders, payable to BNL, must be received by Friday, March 29. Put the date of the trip, your BNL life number and your phone number on the back of your check or money order. Your tickets will be given to you at the railroad station on the day of the trip. Refunds will be made only if cancellations are received by the Monday morning preceding the trip.

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On Site

Q: Why is there scaffolding on the Brookhaven House?

A: The scaffolding was put up to facilitate the repair and recaulking of the greenhouse. Plant Engineering's-Building Maintenance is doing the work. In the future, the house will be used as a residence.

Cafeteria Menu

Week Ending March 29

Monday, March 25		
Cream of potato bacon	(cup)	.65
	(bowl)	.85
Turkey à la king on rice		2.10
Western omelet & hash browns		2.10
Hot Deli: Knockwurst & kraut	(bread)	2.00
	(roll)	2.20
Tuesday, March 26		
Turkey noodle soup	(cup)	.65
	(bowl)	.85
Seafood Newburg on rice		2.25
Fried chicken finger platter		2.30
Hot Deli: Sausage Reuben		2.05
Wednesday, March 27		
Old fashioned bean soup	(cup)	.65
	(bowl)	.85
Fettucini alla carbonara & 1 veg.		2.15
Beef & bean tostada & 1 veg.		2.15
Hot Deli: Top round of beef	(bread)	2.10
	(roll)	2.30
Thursday, March 28		
Chicken gumbo soup	(cup)	.65
	(bowl)	.85
Beef stew on noodles		2.20
Spaghetti w/garlic bread. All you can eat. Sorry, no takeouts		2.30
Hot Deli: Turkey breast	(bread)	2.10
	(roll)	2.30
Friday, March 29		
New England clam chowder	(cup)	.65
	(bowl)	.85
Fish 'n chips		2.10
Ham & potato au gratin & 1 veg.		2.10
Hot Deli: Corned beef	(bread)	2.05
	(roll)	2.25

—BERA News—

Photofinishing

BERA is pleased to announce that as of April 1, 20/20 PHOTO will take over the photofinishing service at the Sales and Service Office in Berkner Hall.

Daily pickup and delivery will provide overnight return of processing and finished prints on 35mm, 110, 126 and disc color film. Prints will be available in the regular 3R size as well as the custom 4R size. All color prints are made on Kodak paper, using Kodak chemical formulations and Kodak equipment. Kodak quality levels are maintained by use of the Kodak Technet System.

Reprints, enlargements, slides, movies and black and white prints will be returned within 5-7 work days.

BERA and 20/20 PHOTO have arranged to bring this service to you at low prices.

Golf

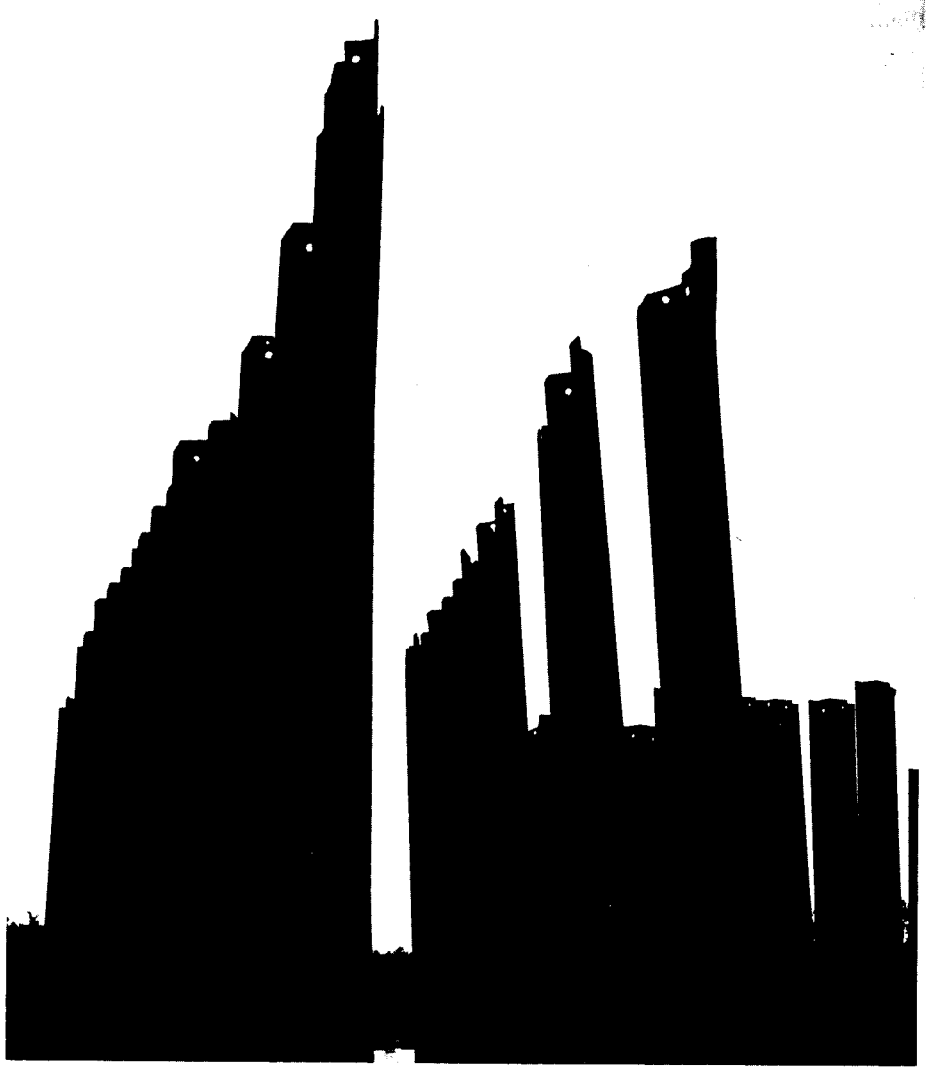
An organizational meeting of the BERA Golf Association will be held on Friday, March 29, at 5:15 p.m. in the lounge of the Recreation Hall. Membership applications for 1985 have been mailed out to last year's membership. Prospective members may obtain a form by contacting Ron Webster, Ext. 2845. The deadline for returning applications is Monday, April 1. Those received after that date will not be accepted.

Cooking Exchange

On Wednesday, March 27, the Israeli members of the Cooking Exchange will demonstrate Passover foods. Among family favorites will be matzo balls.

The Cooking Exchange is open to all on-site employees and their family members. Meetings are held on the second and fourth Wednesday of each month in the Recreation Building from 12:30 to 2:30 p.m. There is a $1 charge, which includes food samples and copies of the recipes. Babysitting is available at 50c per child.

For further information contact Dee Polychronakos at 744-3578.



Peter Horton

They may look like a section of the Manhattan skyline, but the 30-foot upright fixtures in the ground at the corner of Johns Hopkins Street and Brookhaven Avenue are some of several hundred metal sheets. The sheets are being vibrated out of the ground by a vibrator hammer used in conjunction with a large crane; they will be removed by the crane alone. The sheets were put in place last December to shore up the sides of a 1500-foot-long, 20-foot-deep trench running from the corner of Lewis Road and Johns Hopkins Street to the back of the new firehouse adjacent to Brookhaven Avenue. The trench now contains the steam, condensate and sewer pipes for the new firehouse and other buildings west of Upton Road. According to Project Engineer Edward Murphy of Plant Engineering, the use of the sheets worked well because they did not require bracing, and this made the installation of the 40-foot sections of piping easy. He expects the trench work to be completed by mid-April.

Bowling

Red/Green League
High games were bowled by H. Marshall 225, T. Holmquist 224, K. Riker 215, K. Asselta 214, E. Meier 214, B. Jones 212, E. Sperry IV 209, N. Parrinello 206, D. Adams 205, B. Sick 203, J. Muller 200, J. Cochrane 200.

White League
J. Griffin had games of 222/237/665 scratch, K. Asselta 224, B. Barberich 215, K. Riker 203, J. Pinelli 207, M. Belligan 193, J. Theide 193, B. Jellett 189, L. Barberich 187, P. Oster 185.

Purple League
S. Moore rolled a 220, D. Adams 216, B. Jones 202/200, C. Jacobs 204, J. Roesler 201, E. Zukowski 179, P. Manzella 176.

Pink League
K. Vogel had a 235.

Volleyball

	W-L
A League	
Dinkers	40-5
UpFaGrabs	30-15
Semi Tough	23-22
Teddy Bares	22-23
Mixed Ups	13-32
Nuts and Bolts	7-38
B League	
TNT	36-9
Phoubars	32-13
Fossils	29-16
Set Ups	14-31
Chungas Revenge	13-32
Servers	11-34
C League	
Tigers	34-11
Captain Midnight	31-14
Screw Balls	29-16
Craw	16-29
Quirks	13-32
Couples	12-33
Open League	
Phoenix	48-0
Odds & Sods	29-19
Half Lifes	21-27
Rowdy Radicals	19-29
Team 6	19-29
Generic	7-41

Singles Club

For those interested in the game of jai alai, Doris Terry, Singles Club, is organizing a trip on Saturday, March 30, at a cost of $21, plus tax and tips. Price includes ferryboat, dinner and admission. Everybody welcome. Call Terry on Ext. 2228 for information.

Basketball

First Game	
Coasters - 77	
K. Cosgrove	2
K. D'Amico	4
R. Doty	20
M. Fulkerson	10
F. Malone	13
B. Allen	6
M. Williams	20
L. Snead	2
Runaways - 83	
S. Gilbert	14
T. James	34
T. Mooney	2
G. Sheperd	17
G. Smith	2
M. Tardd	14
Second Game	
Hollywood - 59	
R. Domenech	2
G. Grigg	2
D. Hall	6
G. Mack	6
E. Meier, Jr.	19
D. Nordstrom	16
A. Richardson	8
Longshots - 64	
J. Gaffney	6
J. Garrison	9
L. James	17
R. Rowley	4
R. Seymore	17
E. Taylor	1
L. Walcott	10

Standings

	Won	Lost
Longshots	5	2
Hollywood	4	3
Runaways	4	3
Coasters	1	6

Come to School And Hear the Folksinger

The Upton Nursery School is sponsoring a Vicki Diamond Concert to kick off registration for the 1985-86 school year. Ms. Diamond, a popular folksinger, has appeared at the school in previous years, much to everyone's delight. The concert will take place on Monday, April 1, at 10 a.m. in the Recreation Building, and will give prospective students and their parents a chance to see the school in action.

The school is non-profit and is run on a cooperative basis. Parents assist teachers on a rotating schedule and manage school business. Classes are conducted by certified teachers who help the children explore their surroundings and capabilities and develop respect for themselves and others. No formal academic subjects are taught.

Registration is open to three and four-year-old children of BNL employees and visitors. Tuition is $35 per month for two mornings per week, and $46 per month for three mornings per week. For further information and applications, call Joan Rice at 924-8880, or Marian Dreimann at 924-6723 after 5:30 p.m.

Classified Advertisements

Placement Notices

The Laboratory's placement policy is to select the best-qualified candidate for an available position, with consideration given to candidates in the following order of priority: (1) present employees within the department, with preference to those within the immediate work group; (2) present employees within the Laboratory as a whole; and (3) outside applicants. In keeping with the Affirmative Action plan, selection decisions are made without regard to age, race, color, religion, national origin, sex, handicap or veteran status.

Each week, the Personnel Office lists new personnel placement requisitions. The purpose of these listings is, first, to provide open placement information on all non-scientific staff positions; second, to give employees an opportunity to request consideration for themselves through Personnel; and, finally, for general recruiting purposes. Because of the priority preference policy stated above, each listing does not necessarily represent an opportunity for all candidates. As a guide to readers, the listings are grouped according to the anticipated area of recruitment.

Except when operational needs require otherwise, positions will remain open for one week following publication date.

For further information regarding a placement listing, contact the Employment Manager, Ext. 2882.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside applicants.

2204. LIBRARY ASSISTANT - (Half time) Requires AAS degree or equivalent plus specialized knowledge of library operations gained through pertinent work experience. Tasks include quick reference, book ordering and card catalog maintenance. Requires accurate typing skills. TSO Library. Department of Nuclear Energy.

2205. RESEARCH ENGINEER - Requires BS degree or equivalent in a relevant field, plus a minimum of five years' experience and the ability to work independently to aid in the development of interfaces between CAMAC and FASTbus and VMEbus. Familiarity with VMEbus protocols strongly desired. Will work in the Heavy Ion Research Group at the AGS. Physics Department.

Autos & Auto Supplies

73 SUZUKI - 500, very good cond., many new parts, reasonable; (3) Uniroyal radial tires, P175-13; (2) Sears glass belted tires, E78-14, $10/ea. Ext. 7518.

63 STUDEBAKER - Cruiser, new carpets, seat covers, tires, brakes, fun car, $800. 281-8031.

81 BMW - 320i Luxus, 5 spd., a/c, sunroof, alloys, metallic green, 32k mi., excel., $10,500. 265-5426 after 6 p.m.

THEFT SENTRY PAGING SYSTEM - auto page AP/4500, new, boxed, cost over $280, sell for $210. Ext. 2981.

83 CHEVY CAPRICE - mint cond., loaded, $8,000. Harry Farrell, 286-3827.

75 FIAT - 128, 4 spd., am/fm, good engine, (2) new tires, needs work, $350. Ext. 3714 or 3208 after 7 p.m.

73 LESABRE - good cond., runs well, needs muffler, V8, p/s, p/b, clean, $500. Oster, Ext. 3876.

80 VESPA SCOOTER - 200cc, 50 mpg, 55 mph, 5k mi., must sell, $500. Nick, Ext. 2490.

70 FORD - straight 6, runs great, $300 or best offer. John, 878-0939 after 6 p.m.

80 TOYOTA WAGON - good cond., new brakes, exhaust system, $2,800. Rick, 363-2765.

73 FORD STATION WAGON - very reliable, many new parts, good rubber, a/t, p/s, p/b, 351 cu. in., $850. 475-6981.

59 CHEVY - great cond., runs excel., needs nothing, many spare parts, $2,000. Joe, Ext. 2556.

71 VOLVO - 164E, a/t, 4 dr., a/c, am/fm stereo, p/s, p/b, very clean, 125k; '70 Dodge Dart, cream puff, 3 spd., 6 cyl., 4 dr., 60k, very clean. 878-2233 after 6.

77 FORD - F150 Super Cab, 351 V8, 4 spd., dual gas tanks, positrac, cap, insert. 286-2287 after 6 p.m.

73 DUSTER - 2 dr., 38k mi., excel. cond., $2,000. Ext. 4634.

POP-UP CAMPER - Cox, sleeps 6, needs canvas replaced (approx. $450-500 installed), asking $300. Walter, Ext. 4986 or 757-5478.

78 HONDA CVCC - hatchback, $1,500 firm. Ext. 4318.

75 CHEVY MALIBU - a/t, p/s, p/b, reliable transp., asking, $1,000. John, Ext. 5515 or 744-1793 eves.

CHEVY RIMS - (4) 15", $10 ea.; Blazer/van rear seat, $50; truck front tire carrier, $20. Bill, Ext. 2807 or 281-0557.

76 GRAND PRIX - gray, p/w, p/s, good cond., 80k mi., orig. owner, $2,300 neg. 727-6515 after 4 p.m.

71 VW CAMPER - fully equipped, rebuilt motor w/5k mi. Augie, 821-0379.

81 PLYMOUTH TC-3 - 4 spd., am/fm, custom interior, 50k mi., black/silver, excel., $4,000 firm. Ed, Ext. 4561 or 821-1783.

76 FORD COBRA II - black, 79k mi., am/fm stereo, a/c, p/b, a/t, new parts, $2,300 neg. 727-7478 after 4 p.m.

79 YAMAHA XS400 - black, 5k mi., windshield, rack, eng. guards, 2 Aries helmets, $675. Ext. 4187 or 929-8204.

CB RADIO - w/aerial, $35. Walt, 298-8601.

75 CHRYSLER NEWPORT - 2 dr., high mi., runs well, asking $600 or best offer. 727-5912.

81 VIKING POP-UP - sleeps 6, sink, stove, ice box, awning, excel. cond., $2,300. Ext. 5046.

CAMPER - fits 3/4 ton pickup, sleeps 4, oven, sink, self-contained, asking $800, neg. Ann, 281-9082.

78 OLDS DELTA 88 - Royale, 4 dr., V8, a/t, p/s, p/b, p/locks, a/c, fm/am cassette, CB, excel. cond., $3,000. Ext. 4305 or 286-1253.

74 FORD PINTO WAGON - a/t, clean in & out, good trans., $1,100. Harry, Ext. 7578 or 744-2715.

72 NEWPORT - 2 dr., 383 eng., runs well, asking $200 or best offer. Lou, Ext. 4666 or 698-6585 after 5 p.m.

79 PINTO - 4 spd., 2 dr., new clutch & exhaust, good tires, good cond., $1,600. Ext. 4605 or 281-5456 eves.

76 CHEVY MALIBU - 2 dr., 6 cyl., 3 spd., a/c, good mpg, high mi., runs well, looks good, $1,000. 744-9677.

WHEELS - (4) 1985 Jaguar XJ6, brand new, boxed, orig. cost $1,100, asking $600. 266-1688.

71 OLDS WAGON - V8, a/t, p/b, p/s, a/c, many new parts, best offer. Al, Ext. 4645 or 744-0354.

RIMS - (4) aluminum slotted, 15 x 8, 5 lug, Ford, Jeep, International 4 X 4; Holley 4 barrel carburetor & manifold for all GM, Chevy V6, like new, make offer. 281-7230.

78 HONDA HAWK T2 - 400 cc, plexifairing, luggage rack, engine guards, nylon bike cover, $550. Sam, Ext. 4749.

70 DODGE SWINGER - slant 6, a/t, new exhaust, starter, transmission, 4 radial tires, alternator, runs excel. Chyng, Ext. 4391/4563 or 751-8224.

78 MAZDA GLC - 5 spd., good cond., $1,400. Ext. 4524 or 643-5579.

75 PLYMOUTH GRAN FURY - good running cond., p/b, p/s, a/c, am radio, $750 or best offer. 473-8199.

78 SUZUKI - 1000E, mint cond., $1,800; '72 Ford window van, V8, $900. Edwards, Ext. 4027 or 286-1121.

76 MERCURY CAPRI - hatchback, 4 spd., am/fm radio, excel. cond., asking $1,500. 744-3517.

TRAVEL TRAILER - 17-1/2', sleeps 6, self-contained, new tires & brakes, excel. cond., $2,800. Artie, Ext. 2697 or 325-0743.

75 FORD PINTO - station wagon, 4 cyl., standard transmission, 65k mi., new brakes, exhaust, $1,100. Ext. 2442 or 4088.

77 AMC PACER - station wagon, p/s, p/b, a/c, 70k mi., excel., $1,500. 732-6870.

79 CHEVY CHEVETTE - 76k mi., a/t, a/c, excel. cond., $1,900. Om, Ext. 5332 or 928-2994.

Boats & Marine Supplies

14' JON BOAT - Sears, $300; 1-man boat loader, never used, $35. 924-4373.

22' CATALINA - 1982, sloop, swing keel, many extras, immaculate, $9,900. Gary, Ext. 7518 or 589-5490.

17' PEARSON HAWK - fiberglass, 3.5 HP, trailer, sails, $2,000. 734-5514 or (212) 866-5767.

BOAT/TRAILER WINCH - electric, $50. Ext. 4312.

WIND SURFERS - very quick fun board & fast sailing board. John, Ext. 5515 or 744-1793.

17' COBIA VEE - 100 HP Johnson, Dilly trailer, compass, swim ladder, extras. 744-5801.

16' LONESTAR RUNABOUT - fiberglass hull, good cond., w/trailer & extras, no motor, $350. Ext. 4502.

ALUMINUM BOAT TRAILER - good for up to 16' boat, asking $500. Walter, Ext. 4986 or 757-5478.

19' GRADY - white, 1983, 115 Evinrude, power trim & tilt, full camper canvas w/'85 Cox trailer, E-Z loader. John, Ext. 4668 or 324-0220.

23' PUMA KEEL SLOOP - sleeps 4, head & galley, 6 HP, many extras, $8,500. Walter, Ext. 4605.

24' GARVEY - 8' beam, planked & fiberglassed, 1975, 70 HP Evinrude. 586-8431 eves.

MUSHROOM ANCHORS - (1) 300 lb., (1) 250 lb. w/chain, best offer. 331-4052 after 6 p.m.

ZINCS - shaft collars, rudder buttons, outdrives, Merc, Volvo, OMC, etc. 298-4089.

21' GALAXY - 1983 deep V cuddy cabin, 120 HP Volvo, 30 hrs., port-a-potty, am/fm cassette, compass, depth, full swim platform, full canvas, like new, extras, $10,000. Ext. 3589 or 281-3635.

23' CHRYSLER CABIN BOAT- fiberglass, 1968 twin Volvo engines, sleeps 4, extras, $5,500. 399-3381.

20' FRIENDSHIP SLOOP - new deck, new jib, staysail, sleeps 2, $6,500. Bob, Ext. 7225.

Miscellaneous

SKI BOOTS - Nordica, brand new, never used, size 13 med., $40. Klein, Ext. 4018.

BATHROOM SINK - hangs on wall, very good cond., $25; (4) bath panel kits, new, never used, $20/ea. Dave, Ext. 3093 or 281-0062.

CRIB - and mattress, $40; convertible carriage, $20; twin headboard/bed, $15. Ext. 3084 or 399-4394.

TABLE SAW - 9", 3/4 HP motor, extras, Craftsman, $175. 924-4373.

HAND TRUCK - heavy duty, used on loading platforms, reasonable. Dan, Ext. 7518.

HAM OPERATORS - HW16 transceiver, VFO, antenna tuner, SWR meter, coax switch, $200. Oster, 589-2648.

SKI RACKS - roof mount, $30. Rick, 727-0499.

AUDIO SYSTEM - Fischer, compl. w/cabinet, model MC708, 3 mos. old, mint, asking, $225. Vinnie, 399-1559.

SOFA - and loveseat, tuxedo style, cream & light gold velvet, $300/set; bright colonial print loveseat, very good cond., $100; Doughboy table & corner table, colonial pine, $100/set. Mark, Ext. 5176.

SOCCER SHOES - used once, sizes 8-9, $8/pr.; (2) T.I. 99-4A joy sticks, almost new, $18. 744-4792 eves.

TRS-80 - Mod I, 4 drives, printer, LDOS DOS2.3, manuals, work well, $1,100 or offer. Jerome, Ext. 4337.

GM CAR SEATS - (2) child's, $6/ea. 821-1704 eves.

CB - Lafayette, hand held, with power pack, $40; Morsan tent, 7x7, like new, $50. Ext. 4312.

STEREO - Channel Master, am/fm 8-track, w/2 standing speakers, perfect cond., BSR turntable incl., $150. 286-3865.

GOLF CLUBS - Wilson 1200, 3-PW irons, 4 woods, very good cond., $200. 475-4792 after 5 p.m.

FORSYTHIA BUSHES - 3-4 ft., dug & balled in Center Moriches, $ ea. Chris, 878-0621.

MASTER BEDROOM SET - triple dresser, mirror, chest, night stand, $300. 563-2847.

KENMORE GAS DRYER - white, 4 cycle, new, $250. Pete, Ext. 4428.

STEREO SYSTEM - receiver, turntable, speakers, cassette deck, $350 takes all. John, Ext. 5515 or 744-1793.

DRESSER - w/mirror, 3 cedar drawers, $30. Howard, 878-8294.

VACUUM - Hoover Celebrity QS, 3.7 HP, w/power head, new, $150. 727-3830.

ENCYCLOPEDIA - full set, Funk & Wagner, $30. 821-0379.

BOOKCASE - 3 units, combination w/sliding doors for books, stereo & TV, walnut finish, 30 x 12 x 63" ea., $100. 924-3066.

TABLE LAMPS - (2), $10. 727-5912.

TICKETS - (3) for North Carolina Dance Theater, SUNY Fine Arts Center, Apr. 13, $9 ea. Ext. 7709.

TICKETS - (4) for Special Family Program of Martha Graham Dance Co., Easter Sunday, 2 p.m., Row B, 2nd ring, Lincoln Center. Ext. 4771 or 286-8747.

FREEZER - 19 cu. ft., upright, $50; 40 channel CB, digital base, $50. Harry, Ext. 7578 or 744-2715 after 6 p.m.

19" COLOR TV - Sears, 1-1/2 yrs. old, great picture, plus cable extras. Luis, Ext. 4666 or 698-6585.

TORO ROTOTILLER - 5 HP, good cond., $250. Ext. 7336 or 286-9606.

KODAK REPLENISHER - D76R; wallpaper, new, (4) double rolls, beige w/small design, $5/roll. Susan, Ext. 4267.

ELECTRIC BED - twin size w/vibrator, excel. cond., $450. 286-1506.

ADMIRAL REFRIGERATOR - white, very good cond., 2 dr., $100. Ext. 2705 or 286-1062.

OIL TANK - (2) 300 gal., $50; 275 gal., $25, good cond. 265-8093.

EQUALIZER - ADC Soundshaper graphic equalizer, 10 bands, two tape monitors, excel. cond., $100. Ext. 4153 or 732-5829.

SCOTT LAWN SPREADER - $30; croquet set on wheels, $35; hand lawn mower, $35. Corliss, Ext. 4438 or 472-1585.

SPEAKERS - pair of large Advent speakers, late model, excel. cond., $200 for both. Ext. 4153 or 732-5829.

FAN - new, paid $30, sell $20; heating pad, new, paid $32, sell $20, leaving for Europe. Edith, Ext. 4379 or 3002.

MOVING - everything must go, vacuum, lamps, pottery, kitchen stuff, wicker bench, bed & mattress, plus more. 473-8199.

HIKING BOOTS - Wolverine, woman's, size 7, $20. Gene, Ext. 3354.

WOOD BURNING STOVE - Franklin, 26", $25; electric fan forced heater, $15. Edwards, Ext. 4027 or 286-1121.

REFRIGERATORS - (3) used, 6', 10', 19'; portable dishwasher, good running, make offer. 588-4987.

4-DRAWER CHEST - antique maple, $100; antique oak 3-drawer chest, $100; (4) 19th Century American chairs., $25 ea. 281-2002.

CARPET - 12' x 14' w/padding, $35; baby bathtub; play pen; stroller; crib; fish stand, $5. 878-0717.

PVC DARKROOM SINK - corrugated bottom, 18", splashboard, 72" x 24", like new. 324-7643.

CONSTRUCTION LUMBER - 2 x 4, 2 x 6, etc., good cond., must sell, best offer. Ext. 3631 or 689-8040.

Free

20' GARVEY - with trailer, does not leak, you pick-up. Dan, Ext. 7518.

Car Pools

BLUEPOINT - driver for 4 person pool. Tom, 472-4228.

NORTHPORT/FT. SLAONGA - need 4th person for on time door to door pool. Walter, Ext. 4986.

Lost & Found

FOUND - hubcab, 15" Ford. Joe, Ext. 3084.

FOUND - woman's quartz watch, found in Graphic Arts, Bldg. 197B. Ext. 2950.

FOUND - set of keys outside cafeteria parking lot w/Aquarius charm holder. Joe, Ext. 3084.

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 Rent

MILLER PLACE - private room, private entrance, avail. Mar. 15. 928-0777 after 5 p.m.

CENTER MORICHES - 3-1/2 large rooms, full bath, refrig., carpet, own zone heat, private entrance, cable, no children/pets, Apr. 1 occupancy, 1 mo. security, $525/mo. includes all. 878-0480 eves.

YAPHANK - 4 bdrm. house, 1-1/2 baths, l/r, d/r, large kitchen, completely renovated, 10 min. for Lab, avail. April 15, $800/mo. & util. 924-4872.

MYRTLE BEACH - oceanfront condo., new, 2 bdrms., 2 full baths, sleeps 6, indoor/outdoor pools, spa, gym, 36 golf courses in area, balcony view of ocean. 584-7258 for more info.

WADING RIVER - 3 bdrm. high ranch, 2 bath, l/r, d/r, eik, sun deck, finished basement, 2 car garage, washer/dryer, dishwasher, one acre property, 10 min. to Lab, SWR School, avail. immed. Chyng, Ext. 4391/4396/4563 or 751-8224 after 6 p.m.

STONY BROOK - 2-6 mo. lease, immed. occupancy, 4 bdrms., 2 baths, expanded cape w/full basement & garage, walk to university. $875/mo. & util. 751-8240 eves.

For Sale

SHIRLEY - Tangiers section, 2 bdrms., eik, Florida room, assum. FHA mort., 100x180, new water softener, refrig., oversized detached garage, new siding, principals only. Ext. 4211 or 399-3002 eves.

E. PATCHOGUE - S. Durkee La., custom cape cod, 2,000 sq. ft., beautiful 1/2 acre lot, walk to beach & marina, 4 bdrms., 1 w/kitchenette, 2 baths, study w/fireplace, full basement, attic, garage, S. Country School District, $153,000. 289-9724.

CORAM - Birchwood at Bretton Woods, 3 bdrm. condo., Dalton model, den, l/r, formal d/r, 1-1/2 baths, patio, gas heat, central a/c, like new, many extras, 1/2 block to Clubhouse. Ext. 7338 or 324-7643.

Wanted

MEN'S WARDROBE CLOSET - dresser. John, Ext. 3651 or 744-6287.

BICYCLE RACK - for small hatchback car, reasonably priced. Leslie, Ext. 3382 or 473-5211.

RIM - 13", 5-lug. Janet, Ext. 2345 or 929-8152.

CAMPBELLS SOUP LABELS - send to F. Chandler, Bldg. T-89, for St. Mary School, E. Islip.

BICYCLE - for adult, good cond., reasonable price. Tak, Ext. 2823 or 3187.

TRAINS - Lionel, any "0" gauge or "027" gauge cars, track & equip. Frank, Ext. 3120.

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

BABYSITTER - 3:30 p.m. to 1:30 a.m. weeknights, 1 to 5 nights/week at my home in Shoreham. Alan, Ext. 2928.

MOTOR HOME - to rent, last week of June, all July. John, Ext. 7726.

ELECTRIC WHEEL CHAIR - Ext. 4921 or 399-1249.

BOY'S BICYCLE - Ext. 4490 or 289-9724.

SLIDING GLASS DOORS - complete w/frame for screened porch. Fred Kuehl, Ext. 7947 or 588-2268.

TIMEX 1000/SINCLAIR ZX81 - hardware, accessories, software, literature. Pete, Ext. 7190/2193/3166 or 369-1844.

RECORDS - 45 RPM & some LPS of the 50's & 60's era. Frank, Ext. 3120.

BOYS - to play Little League football, registration April 13 & 20, Port Jefferson Moose Lodge. Mike, 473-8762.

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
☐ 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).