BROOKHAVEN BULLETIN
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BROOKHAVEN NATIONAL LABORATORY

Different Countries, Different Houses

In at least one way, housing in Denmark is like that in America: expensive. However, contrasts were more pronounced than similarities at the seminar "Approaches to Quality in Housing: The Danish & American Experience," held October 2 at BNL.

As it was pointed out during the day-long workshop, Denmark, because of its small size, uniform climate and determination to minimize its dependence on imported energy, has a single, national performance code demanding energy conservation. This has resulted in "catalog building," the prefabrication by different manufacturers of interchangeable modular building components that can be ordered by catalog number to fit into any house.

The U.S., in contrast, leaves building specifications to counties, towns and cities, which usually adopt minimum standards. Therefore, the ingenuity and idosyncrasies of the individual builders still predominate. While prefabricated components, such as windows and doors, are used, modular coordination is not easily achievable because of the diversity of codes and builders.

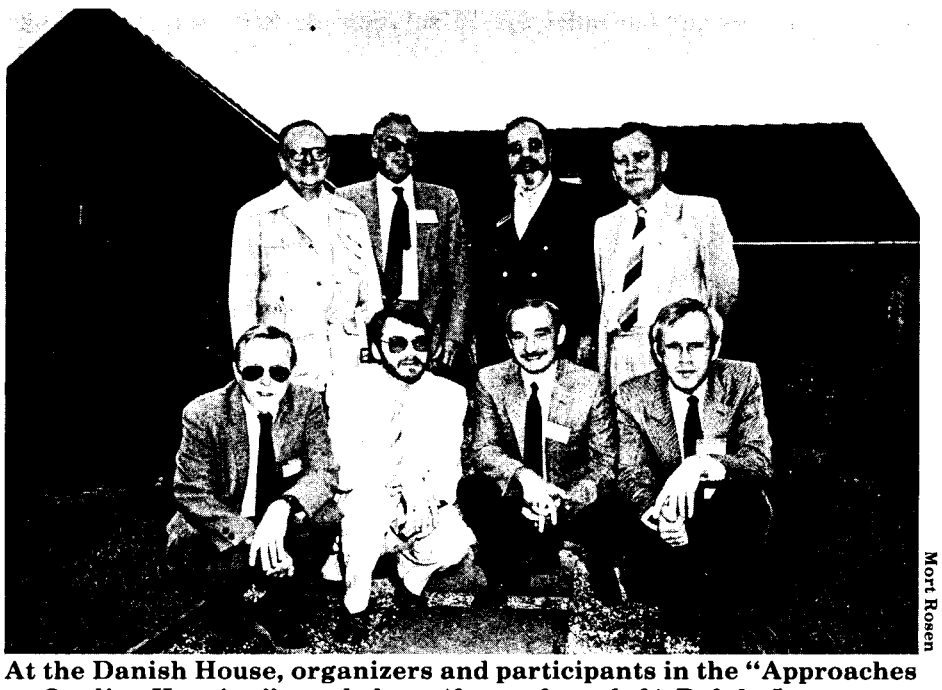
The proclaimed purpose of this meeting was to exchange American and Danish housing ideas, but the Danes had another purpose for attending. As they have done with the Danish House, the Danes wish to export their energy-conscious, prefabricated, modular building components and houses to this country.

"The U.S. is vunerable to foreign competition in its domestic housing market because of its large size," admitted Robert Gold, who presented views of the National Association of Homebuilders, an organization whose 150,000 members produce 70% of U.S. housing. "This, combined with the cyclical nature of the U.S. housing market, means that American builders must look to entering foreign markets as well."

U.S. builders at the meeting felt that their mid-priced, site-framed houses are more competitive than comparably priced American prefabs because the American middle class prefers conventionally built homes. According to Gold, builders do not fear the market challenge by the Danes, Swedes and others, as their imported prefabs are in a high price range in which not many homes are sold anyway.

On the other hand, the fate of imported, energy-efficient, factory-built homes that the middle class can afford is unknown. It remains to be seen whether comparably priced, American site-framed houses are as energy efficient and how much the American home buyer values the energy conservation features that add to the purchase price but lower heating costs, the major household expenditure.

The housing meeting was held almost two years to the day when Danish Ministry of Housing officials and members of the Architectural & Building Systems Division (A&BSD), Department of Applied Science, paced out the site for the Danish House. Donated by the Danish Ministry of Housing and erected by the Danish company Hosby, the Danish House is a factory-built home, typical of the design and engineering found in Denmark.


Mort Rosen

At the Danish House, organizers and participants in the "Approaches to Quality Housing" workshop: (front, from left) Ralph Jones DAS; Soeren Aggerholm, Danish Building Research Institute (DBRI); Ebbe Johansen, Danish Consulate; Ejner Jerking, Danish Building Agency; (back, from left) Klaus Blach, DBRI; Kurg Sorensen, Danish Building Export Council; Tom O'Hare, DAS; and Neus Bollmann, former Danish Minister of Housing.

The Danish House is the first house in BNL's international village of homes typical of other countries, which is planned to foster technological and cultural exchange. To date, over 20,000 people have walked through this everyday Danish home. Its energy consumption is being monitored by Architect Ralph Jones and Engineer Walter Loss, A&BSD, who have just released the preliminary analysis of the first year's data (see sidebar).

In 1973 during the oil crisis, Denmark built its first "zero-energy" demonstration home, an unconventional structure featuring a solar col-

(Continued on page 2)

Studies of Body Composition Shared at Symposium

"You are what you eat," they say, and there is a certain degree of truth in the saying. You are also what you have inherited genetically, and what you absorb from your surroundings. These factors all have to be considered in studies of body composition, and some seem almost impossible to measure, especially in a body that is very much alive.

Yet the 160 participants who attended the International Symposium on *In Vivo* Body Composition Studies, held at BNL September 28-October 1, have already resolved some of these seeming impossibilities and are deep in researching solutions for others.

The conference, sponsored by the Department of Energy, was co-chaired and organized by Kenneth Ellis and Seiichi Yasumura of the Medical Physics Group in the Medical Department.

The conference focused on state-of-the-art *in vivo* techniques and how they apply to clinical situations, and new body composition data in normal and disease states. The program was divided into sessions on the skeletal and muscle systems, trace metals, and body water compartments and electrolytes. A total of 80 oral and poster presentations was given.

(Continued on page 2)

Mort Rosen

Behind the scenes of the International Symposium on *In Vivo* Body Composition Studies, members of the Medical Physics Group of the Medical Research Center (from left) Anthony Lamonte, Seiichi Yasumura, Kenneth Ellis, Lucian Wielopolski, John Rothmann, Roman Shypailo and Joseph Kehayias are photographed at the Whole Body Counter, which is the world's most sensitive system of its kind. At the Whole Body Counter, several symposium participants from France, Germany, Greece and the United Kingdom were checked for cesium levels in order to monitor fallout in Europe as a result of Chernobyl. These data will be used as an international calibration standard against which other countries will check their own levels.

Not a Bad Fuel Bill

Two hundred gallons of gas or oil per year is all it takes to maintain the 1500 square-foot Danish House and a family of three through a Long Island winter, according to the first year's monitoring results. If fuel is $1 per gallon, that's $200 per year — and that's not a bad fuel bill.

This compares favorably to the estimated heating bill of about $1,000 for a typical house of the same size built before 1975, of $500 for an average home constructed according to the National Association of Home Builders' 1976 standard and of $300 for a standard house built following the 1980 guidelines of the American Society of Heating, Refrigeration and Air Conditioning Engineers.

Architect Ralph Jones and Engineer Walter Loss, who are in charge of the monitoring project, calculated that the Danish House used about 8,000 kilowatt hours to heat the living space (between 65-75°) and the hot water for a family of three, and for running the continuous, forced ventilation system.

What also impressed the monitoring team was that the Danish House required about 2% less heat than Hosby Haus, its Danish manufacturer, had designed the house to need. As certain modifications had to be made in the metric-system house to hook it up to our English-system electrical and plumbing systems, "this deviation is considered insignificant and even more impressive," says Loss.

In addition, the heating prediction was based on the use of an air-to-air heat exchanger, not a heat pump as was actually installed in the house. According to Loss, as the air-to-air heat exchanger is inherently less efficient, this could account for the slight overestimation of the heating demand as well.

To monitor the house, Loss and Jones placed 30 sensors around the house, to collect such data as outdoor and room temperatures, absolute and relative humidity, wind speed and direction, and solar radiation. Seventeen gallons of hot water were drawn three times a day to simulate the water use of a family of three. Says Loss, "This fifty-one-gallon-a-day total is a compromise between the 64 gallons an American family of three would use and the 46 gallons a Danish family would draw — Americans bathe more often than do Europeans."

Russell Dietz, head of the Tracer Techology Center, DAS, and the monitoring team tested the house's air tightness using Dietz's BNL/Air Infiltration Measurement System (AIMS). They found the house has an extremely low infiltration rate: 0.1 air change per hour (ACH) by natural air infiltration, and 0.4 ACH with the addition of the forced ventilation by the heat pump. "The natural infiltration rate is about 10% of that found in a typical pre-1975 house," explains Jones. "In fact, the house does require forced ventilation or some window opening to ensure safe indoor air quality."

The Danish House will be monitored for two more years. Other projects to be carried out over that time include determining the heat-flow rates from the attic, crawl space and living area; the heat loss through the windows; the detailed performance of the heat pump; and "comfort" studies, which require people living in the Danish House. — M.B.

Keep It Under Your Hat

Jewish congregations around the world gathered to celebrate the Jewish New Year of 5747 last Friday evening, and once again they will congregate to observe Yom Kippur, the Jewish Day of Atonement, beginning Sunday night. On these High Holy Days, as well as on the Sabbath and at weddings and bar mitzvahs, yarmulke-wearing males share an ancient and universal problem: how to keep their skullcaps on their heads.

Mort Rosen

Lev Neymotin and Kippon — a preliminary version is in his yarmulke, and the finished product is in the package.

Bobby pins are used by everyday wearers of kippahs (the Hebrew word for yarmulkes). This solution is not ideal, as bobby pins tend to get lost. A Brooklyn rabbi, Sholom Ber Schapiro, in search of a sophisticated scientific solution to the skullcap-slippage problem, contacted an Israeli scientist, Herman Branover, at the Beer-Sheva University of the Negev, whose field is magneto-hydrodynamics. Branover referred the rabbi to his friend from Russia, BNL Mechanical Engineer Lev Neymotin, Department of Nuclear Energy (DNE).

Rabbi Schapiro suggested the use of glues or magnets, but Neymotin immediately thought of a simpler, mechanical fastener: Velcro. After consulting with the manufacturer of Velcro and experimenting with various Velcro samples, "Kippon" was begotten last March. It is an ingenious product with a clever name to keep your kippah on.

"Trying to keep your kippah on your head was an inconvenience we lived with, but never really gave much thought to," says Neymotin, an Orthodox Jew who wears a yarmulke at home. According to rabbinic law, Jewish men are required to cover their heads while praying and performing rituals, and as a sign of piety and Jewish identity.

"We needed something to engage the kippah with the hair, and I thought of Velcro because it is made of two parts: loops and hooks," explains Neymotin. "God put hair on the head, which can serve as loops, and we could put the hooks on the kippah."

Four adhesive-backed, hook strips of Velcro are inside each Kippon package, on which it is printed, "you must have at least some hair for Kippon to work." According to the directions, Kippon may be attached to any type of yarmulke, be it woven, knit or leather, and any kind of hair, "straight or wild!" The Kippon Velcro strips are pressed inside of the yarmulke, and the yarmulke is attached to the head by gently seating it in the hair.

Kippon wearers are then free of the worry of losing their kippah and free to do a handstand, if they can, to prove to themselves that the product works. "You just put your kippah on and forget about it — which is good. But in forgetting about your kippah, you should not forget you are a Jew," comments Neymotin, who emigrated from the Soviet Union with his family 7½ years ago.

As Neymotin is a silent partner in the Kippon Corporation, Rabbi Schapiro is handling the marketing and sales. At present, Kippon is being sold in Jewish religious article stores in the U.S., Israel and Europe.

"The Rabbi wants to develop a Velcro specifically for the hair and the Velcro manufacturer is interested, so I will have a hand in the research and development, but that is it," says Neymotin. "I have the philosophy that I should try everything once: This was my first attempt at developing a product for market, and now I know what it is about. That's enough for me."

His line of work at BNL is totally different. Working within a group of the Reactor Analysis Division, DNE, and using the computer, Neymotin is modeling the Chernobyl nuclear power plant to determine to what degree the Soviets' accident scenario is realistic.

Neymotin and his son use Kippons, and Neymotin has provided the males of his Stony Brook synagogue with his invention. Taking the suggestion of a friend, he sent a free sample to Pope John Paul II and to John Cardinal O'Connor, with a letter stating, "On the assumption that Catholic wearers of the skullcap experience the same slippage problem as Jews, it has occurred to me that the Catholic clergy might also be interested in this new product."

Says Neymotin, "Cardinal O'Connor wrote back, thanking me for the Kippon and informing me that the Catholic market would be rather small, as only bishops, archbishops and cardinals wear zucchettos, which are skullcaps similar to yarmulkes." Neymotin has yet to hear from the Vatican. — Marsha Belford

Symposium (Cont'd)

One of the ten papers contributed by Brookhaven staff members reported on a new, non-invasive technique recently developed at BNL, using neutron activation analysis to assess bone aluminum levels. Ellis said that the technique, which is a potential replacement of bone biopsy for bone aluminum analysis, is clinically feasible and ready for use in studies of renal disease.

Other papers dealt with post-menopausal osteoporosis, or how the skeleton grows brittle and collapses with age. This is being treated with calcium, estrogen and other substances, in a variety of ways. At BNL and elsewhere these therapies are being evaluated by non-invasive techniques, including neutron activation analysis. The findings from these studies are of major concern in the U.S., mainly because of the increasing percentage of older subjects in the population. Other techniques presented at the conference for studying bone changes included computerized tomography, dual photon absorptiometry and ultrasound.

Many further studies discussed at the symposium are concerned with the body make-up of fat and lean tissues. Generally, these research efforts center on how to maintain the lean tissue, which helps the body fight disease, heal quickly and get back to normal life. In the case of cancer, for example, weight loss with the consequent loss of lean tissue can be a serious complication in the treatment of the cancer itself.

Not only must data on research be gathered, but its validity and reliability must also be continually monitored. For example, some of the newer techniques discussed at the conference, such as bioelectrical impedance, which relates lean and fat mass differences to resistance to electric charges, might apply only to a particular study group, depending on diet, exercise habits and culture. These techniques, which Ellis explained are being further verified, are not used on site at present. "At BNL, we measure the body elemental composition, using nuclear techniques. These data are now considered as the 'gold standard' in this field," says Ellis. "The bioelectrical techniques are still at the developmental stage. Some may flourish, some will disappear. We'll find out — at the second or third conference."

— Liz Seubert

photos by Horton

Buckling Up Pays Off

Patrol Officer Colleen Daily had a pleasant assignment on Thursday, October 2: She got to hand out discount movie tickets to five lucky employees who came through the Main Gate that morning wearing their seat belts. The five were (clockwise from top left) Donna Grabowski, Technical Information; Frank DiMaggio, AGS; Heather Hartmann, AGS; Fred Pond, Supply & Materiel; and (not shown) Jennifer Grodberg, Biology. This was the first of a continuing series of random checks that the Safeguards & Security Division plans to conduct as an incentive program to encourage employees to wear their seat belts. Though the times and locations of the random distributions will change, one thing will not: Any employee who is stopped and who is wearing a seat belt will receive a discount movie theater ticket good at all United Artist Eastern Theaters.

Houses (Cont'd)

lector, sun space and heat pump. "Initially, we thought the way to reduce a house's energy demand was to build a complex house with all these complex systems," said Soeren Aggerholm, of the Danish Building Research Institute, during his workshop presentation. "Through our research, we learned that the best way was the simplest: Build an ordinary house, but insulate it more and better, construct it tighter and pay attention to details in design, engineering and materials."

Paying attention to details means using modular components in a coordinated fashion. "Modular coordination is a novel approach to solving the problems of demand and energy conservation," explained Klaus Blach, of the Danish Building Research Institute, in another of the meeting's talks. BNL's Danish House is a simple, superinsulated structure that demonstrates the principles of modular coordination: The same components are used to assemble the 52 other models made by Hosby.

To ensure that the same components would fit in different houses, the Danish government sponsored research on how best to join these components. "While the tolerance of cabinetwork is half a millimeter, the variation in the dimensions of carpentry is ten millimeters," explained Blach. Therefore, joints and building layouts had to be devised to accommodate dimensional deviations.

Just because a house is made of modular components does not mean that originality and design are sacrificed to keep the cost reasonable and the house weather-tight. Blach showed several examples of homes in which the same components were used but in a different fashion, resulting in totally different looks.

In Denmark, the government's call for modular coordination means that projects *must* be designed so that modular componets *may* be used. "We legislated design, not use — the selection of components is up to the individual architect, engineer and builder," explains Blach. To meet the Danish government's strict energy usage limits and to maintain profits, as the cost of building conventionally increases faster than prefabricated building, modular coordination is widely used.

"As we have set standards for materials and components and test them to ensure they meet those standards, an industrialized builder does not have to make everything himself to be assured that what goes into his building systems and homes meets those standards," added Blach.

Today, 80% of Denmark's homes built in a year are prefabricated. "Modular coordination did not create unemployement," stressed Blach. While prefabrication halved the man-hours involved in constructing a typical Danish house, it tripled the number of houses produced annually.

Concluded Blach, "Individual housing projects were not enough to meet housing needs in Denmark — we had to develop our building industry so it could provide affordable, energy-efficient homes. We did not intend prefabrication to supplant traditional building, but rather that it supplement and complement it."

— Marsha Belford

Coming Up

Physicist Michael Tannenbaum, Physics Department, will give the next Brookhaven Lecture on Thursday, October 23, at 4:30 p.m. in Berkner Hall. He will speak about "How We Caught Quarks by the Tail."

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"Problems and Prospects for Arms Control" will be addressed by the Honorable Ralph Earle II at an AUI-sponsored Labwide Colloquium on Monday, October 20, at 3 p.m., in the Hamilton Seminar Room of Chemistry, Bldg. 555. Now associated with the Center for Foreign Policy Development at Brown University, Mr. Earle served as the Director of the U.S. Arms Control and Disarmament Agency, from January 1980-January 1981, and as the Chief U.S. negotiator at the Strategic Arms Limitation Talks, from October 1978 to January 1980.

Inside Info

Neal Tempel, Biology Department, was recently certified as an Electron Microscopy Technologist in Biological Sciences, under a program operated by the Electron Microscopy Society of America. Certification required that Tempel demonstrate his technical skills by submitting examples of work, such as quality electron micrographs. He was required to work alone to prepare biological specimens and to take, print and interpret the electron micrographs. Tempel was also required to pass a written examination testing his knowledge of the operation and maintenance of electron microscopes, laboratory procedures used in this speciality, cell biology and laboratory safety.

Arrivals & Departures

Arrivals

Jerry Cooperstein	Physics
Sara L. Dawson	Physics
Stephen Godfrey	Physics
John S. Haggerty	Physics
Gayanath W. Fernando	Physics
Leonard Masi Jr.	Reactor
Andrew M. Matheson	Physics
Maxine F. Santoro	Biology
John M. Tranquada	Physics
Chan-Chuan Weng	Chemistry
Klaus Werner	Physics

Departures

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

Paul L. Piciulo	DNE

Swim Club

An over-distance workout will be swum at the next practice of the BNL Swim Club, on Thursday, October 16, at 5:15 p.m. at the BNL pool. Those who can swim two laps of the pool without stopping using the crawl stroke are welcome to the practice. We are taking orders for Barracuda goggles and The Finals swimsuits. For more information, call Marsha Belford, Ext. 5053, or Peter Heotis, Ext. 2304.

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Softball Champs

The winners of the 1986 softball season in League I were Cool 'N Gang: (standing, from left) Pete Eterno, Arthur McMichael, Steve Okula, Tom Boucher, Tirre Farmer (co-captain), Mike Paquette, Bill Devall, Pat Browne, Tony Mendez, (seated, from left) Tom Arabia, Joe Kutschera, Joe Fortunato, Tom Kelly, Pete Palamidis (captain), Pete Cancel. Not pictured: Marty Leach, Phil Ouvrard.

In League II, the Magnuts were the 1986 softball champs: (standing, from left) Mike Anerella, Jim Alduino, Mel Tardd, Dan Schiappa, (seated, from left) Lou Russo (co-captain), Rich McCluskey (captain), Augie Hoffman, John Bennett. Not pictured: John Benante, Tom Dilgen, Don Kazmark, Bob Leroy, Bob Meier, Tony Montagnese, Henry Strelecki, Duncan White.

—photos by Horton

The Survivors took top honors in softball in League III this year: (standing, from left) Payton King, Ken Sutter, George Grigg, Bob Danowski, (seated, from left) Jim Garrison, Sydell Lamb, Bob Brown (captain), Kay Hunt, Ruth Faine, Nancy Danowski. Not pictured: Vernon Faine, Janet Firriolo, Henrietta James, Leroy James (co-captain), Jackie Larrie, Bruce Penn, Rosemary Taylor.

The Foul-Ups dominated softball League IV in 1986: (standing, from left) Eric Bernholz, Kimberly Hoschuh, Gary Smith, Carrie Miles, Walter Kane, Michele Rabatin, Larry Hoff, Carrie Grimshaw, Richard Casella, Jerry Gaeta (co-captain), Rick Backofen (captain), (seated, from left) Jodi Greco, Susan Pepper, Bonnie Biittner, Joan Slavinsky, Maureen Colon, Michael Colon (with Matt Colon). Not pictured: Angela Bernholz, Michele Riccardo.

WIS Party

The Annual Wine and Cheese Party of Brookhaven Women in Science will be held on Wednesday, October 15, from 4:30-6 p.m., in the Recreation Bldg. All members and non-members interested in joining our group are welcome. Please come and meet the newly elected officers.

NY Islanders Hockey Tickets

More than half the Islanders 1986-87 season tickets, which were purchased by BERA as a special service to Lab employees, are still on sale at $20.50 each at the BERA Sales Office in Berkner Hall.

If the BERA Board finds there is no longer an interest in the Islanders, as shown by a decrease in ticket sales, the eight BERA subscription seats will not be renewed in the future.

Bowling

Pink League

High games were bowled by Sandy Asselta 176/161, Ellie Adams 174, Donna McCambridge 172, Maryann Reynolds 169, Ann Parrinello 168, Maria Apelskog 168, Renie Rosati 164/161, Pam Spencer 164.

White League

Donna Riendeau rolled a 216, Ed Sperry IV 200, Gerrie Riker 194, John Hanlon 191, Sue Pepper 187/178, Sharon Smith 180/176.

Red/Green League

T. Prach bowled a 226, H. Marshall 225/213/633 scratch, W. Rasmussen 221, H. Arnesen 219/605 scratch, J. Medaris 215/211, R. Eggert 214, J. Morris 210, T. Holmquist 209, R. Adams 207, A. Pinelli 203.

Freedom From Smoking

As Robert Gale, the American physician who treated Chernobyl radiation victims, pointed out in his AUI lecture last Tuesday, Chernobyl will cause the death of 25,000 people over the next 70 years, but in the same period, the use of tobacco will cause 10,000,000 people to die — "and these deaths are unnecessary and most tragic," said Gale.

To kick the tobacco habit, sign up for the second Freedom From Smoking workshop to be offered on site. The six-session workshop will be given by the American Lung Association of Nassau-Suffolk and is sponsored as a health promotion activity of the Occupational Medical Clinic.

To find out about this stop-smoking program and to register, come to the free orientation session on Tuesday, October 14, from noon to 1 p.m. in Berkner auditorium. The dates for the six workshop sessions are: Thursday, October 16; Thursday, October 23; Monday, October 27; Thursday, October 30; Thursday, November 6; and Thursday, November 13. Each session starts at 5:30 p.m.

The American Lung Association program is based on the premise that smoking is a learned habit, and that quitting involves unlearning the automatic behavior of smoking and substituting new, healthy alternatives. In a step-by-step plan, the workshop will introduce different tactics to help smokers gain control over their behavior. By the third session, participants are expected to be off cigarettes, and staying off them will be the focus of the remaining sessions.

As the Lab is sharing the $50 per person cost of the program, new registrants will pay $25, and, for those repeating the workshop, the fee is $35. For further information or if you wish to register and are unable to attend the orientation, contact Health Promotion Specialist Elaine Friedman, Clinic, Bldg. 490, or Ext. 2699, on Tuesdays or Thursdays.

Of the 38 people who registered for the first smoking-cessation workshop, 27 stopped smoking by the end of the program, and 11 of these, or 41%, have remained non-smokers after 6 months. "Compared to the national average of 25%, BNL employees have succeeded better at kicking the habit," says Friedman. "I believe this is so because the program was held on site, and, therefore, the participants had the support of their coworkers."

Seminars on Site

Betran Associates, designers and manufacturers of high-voltage power supplies, will conduct a seminar entitled, "High-Voltage Power Supplies as Used in High Energy Physics," on Tuesday, October 14, at 10 a.m., in Room D, Berkner Hall. All are welcome, and refreshments will be served.

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On Wednesday, October 15, Ceramic Magnetics, Inc., a division of Thomas & Skinner, manufacturers of specialty ferrite materials, rare-earth magnets and magnetic control components, will present an exhibition and seminar to discuss the manufacture and applications of ferrite and rare-earth magnetic materials. The talk and exhibit will take place at the AGS Department, Bldg. 911B, Rm. A-202, 10 a.m. - 3 p.m. Refreshments will be served.

Cafeteria Menu

Week October 13

Monday, October 13

Cream of mushroom soup	(cup)	.70
	(bowl)	.90
Veal scallopini w/pasta al pesto		2.80
Sauerbraten w/potato pancake		2.75
Hot vegetable plate (lite-weight)		2.20
Hot Deli: Meat loaf sandwich	(bread)	2.40
	(roll)	2.55

Tuesday, October 14

Beef barley soup	(cup)	.70
	(bowl)	.90
Shrimp chow mein over rice		2.65
Chicken liver stroganoff w/rice or 1 veg.		2.50
Zucchini pasta salad (lite-weight)		2.25
Hot Deli: Baked Virginia ham	(bread)	2.40
	(roll)	2.55

Wednesday, October 15

Split pea soup	(cup)	.70
	(bowl)	.90
Lasagna w/garlic bread		2.50
Baked fish w/vegetable topping (lite-weight)		2.75
Hot Deli: BBQ pork	(onion roll)	2.55
	(bread)	2.40

Thursday, October 16

Beef noodle soup	(cup)	.70
	(bowl)	.90
Chicken Kiev w/1 veg.		2.85
Sweet & sour pork over rice		2.65
Fruit & yogurt plate (lite-weight)		2.25
Hot Deli: Smoked turkey	(bread)	2.40
	(roll)	2.55

Friday, October 17

New England seafood chowder	(cup)	1.00
	(bowl)	1.25
Broiled fish w/lemon sauce (lite-weight)		2.85
Chicken pot pie w/extra veg.		2.75
Tortellini salad plate (lite-weight)		2.25
Hot Deli: Chicken pattie	(hero roll)	2.65
Parmesan	(roll)	2.55
	(bread)	2.40

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 and/or appropriate bargaining unit, 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.

THE VACANCIES LISTED BELOW HAVE BEEN EXEMPTED BY THE DIRECTOR'S OFFICE FROM THE CURRENT FREEZE ON OPEN REQUISITIONS.

SCIENTIFIC POSITIONS OPEN: The following staff positions are open. Candidates may apply directly to the department representative named, or through the Office of Scientific Personnel, Ext. 3338.

SCIENTIST/ENGINEER: To join a program to evaluate engineered barriers and structures used for the disposal of low-level radioactive wastes. Contact: P. Soo, Department of Nuclear Energy.

LABORATORY RECRUITMENT - Opportunities for Laboratory employees only.

2483. ENGINEERING POSITION - Requires MS in environmental engineering/chemistry or BS with equivalent experience. Must be proficient in the use of computers for statistical analysis, data base management and modeling of pollutant transport in the environment. Demonstrated writing skills and the ability to interact effectively with regulatory agencies is desirable. Safety and Environmental Protection Division.

Autos & Auto Supplies

71 LTD - wagon, good running cond., asking $350. Ext. 7529.

72 FORD LTD - new trans. Ext. 3525 or 399-1249.

74 CADILLAC - Fleetwood Brougham, fully loaded, 4 dr., sedan, 79k mi., elegant, solid, $2,100. Herb, Ext. 2011 or 929-4446.

75 HONDA GOLDWING - fully equipped, excel. cond. Ext. 7145 or 286-9700, eves.

81 CHEVY - 4 dr., 4 cyl., am/fm, a/c, good cond., $1,750. 654-1146 after 5 p.m.

81 PLYMOUTH RELIANT K - a/t, p/s, 4 dr., 4 cyl., 60k mi., new tires, excel. cond., $2,500. Ext. 3016.

WESTERN WHEELS - (4), cast alum., Cyclone II, 15x7, w/all parts, includes locks, (4 lugs), $200. Sue, Ext. 4931.

73 VOLKSWAGON VAN - a/t, 30k mi. on new engine, $2,100. Saed, Ext. 4463 or 751-2422.

74 CUTLASS SALONE - running excel., new brakes, master cyl., tires, alternator, distributor, good a/c, all power, $450. Kim, Ext. 3181 or 4973.

83 PONTIAC FIREBIRD - red, p/s, p/b, a/c, 66k mi., $5,500. 727-0580 after 3:00 p.m.

77 PONTIAC WAGON - excel. running cond., $750. 567-5947.

75 VOLKSWAGON BEETLE - fuel injection, new brakes, good tires, runs well, radio, $450. Miguel, Ext. 4393 or 3010.

77 JAWA 350RT - new tires, on-off road, 1,950 orig. miles, runs, but needs work. $175. Ext. 3457 or 744-5820.

78 DODGE MONACO - must sell, best reasonable offer, can be seen at Bldg. 480. Ken, Ext. 4514.

66 CHEVY NOVA - 6 cyl., a/t, p/s, runs excel. Ext. 4028 or 669-5428.

80 MERCURY MARQUIS - Brougham, excel. cond., 56k mi., $3,500. Ext. 2949 or 427-2435 after 6 p.m.

79 DATSUN 310 - a/c, am/fm, stereo, new clutch, brakes, drive shaft, $1,000. Mike, Ext. 4407.

82 FORD EXP - no reasonable offer refused. 567-6226 after 5 p.m.

75 FORD LTD - 2 dr., $650. Ext. 4309 or 475-4394.

76 VOLVO 245 WAGON - 78k mi., excel. body/eng., a/t, p/s, p/b, a/c, extras, garaged, asking $3,500 neg., Ralph, Ext. 2368 or 928-6654.

50 CHEVY - pickup, 5-window (rare), extra parts, needs restoration, $500. 744-4386.

78 OLDS CUTLASS SALONE - a/t, V8, a/c, new tires, battery, brakes, 100k mi., orig. owner, $1,200. Ext. 2344.

RIMS - 13", 4 lugs; 14", 5 lugs; 16", 5 lugs. Ext. 2950.

TIRES - (2) 225R14, radials, (2) H7814 snows, $10 each. 744-9677.

TIRES - (2) 875 16-5 Lt Goodyear Tracker, one new, one used, $40, takes all. 475-4596.

79 CHEVETTE - high mileage, excel. running cond., $500. Ext. 2901 or 473-2901.

76 WILDERNESS CAMPER - 18', self-cont., excel. cond., $3,600; 76 Monte Carlo, p/s, p/b, a/c, am/fm, bucket seats, needs alignment, $500. 874-3796.

TIRES - (4) Michelin X2X, 175SR14, good cond., $60 or best offer. Ext. 2676.

77 HONDA - 4 spd., rebuilt trans., engine req. gas, am/fm, $420. Ext. 3164.

81 PLYMOUTH CHAMP - 60k mi., a/t, orig. owner, $2,100. Ext. 2344.

PICKUP/CAMPER PACKAGE - 70 Dodge, D-100, w/slide-on, stove, heat, water, clean, dependable, $950. neg., Bob, Ext. 3145.

66 MUSTANG - needs work or good for parts. 727-0082.

72 CHEVY MALIBU - V8, 4 dr., sedan, runs well, $200. 584-7246 after 6 p.m.

81 PLYMOUTH RELIANT K - good cond., high mileage, $1,150. 472-2750.

77 CHEVY MALIBU - 4 dr., 6 cyl., a/t, motor & trans. good., body poor, make offer. 732-9324.

86 HYUNDAI - htchbk, 9k mi., 40 mpg, 4 spd., am/fm stereo, excel. car, must sell, $5,400. Ext. 2514 or 757-3178.

80 HONDA CB750 - custom motorcycle, 7k mi., $1,200. 286-0654 after 6 p.m.

75 FORD ELITE - a/c, a/t, p/b, p/s, am/fm, reliable transp., $600. Ext. 7901 or 821-9328.

76 PONTIAC - station wagon, a/c, a/t, p/b, p/s, CB, good cond., $650. Ext. 3403 or 3200.

67 TOYOTA - 4 dr., sedan, 4 cyl., 4 spd., runs well. $150. Hank, Ext. 2848 or 472-0553.

81 CHEVETTE - 4 dr., htchbk, 4 spd., very clean, no rust, high mileage, burns no oil, good tires, brakes, clutch, exhaust, $1,100. Joe, Ext. 5131.

77 CHEVY MALIBU - 4 dr., V8, rebuilt trans., clean, no dents, must sell, $1,100, neg. 744-5122 after 6 p.m.

76 AMC HORNET - runs well, reliable, new brakes, clutch, good tires, $500. EXt. 3890 or 3221.

79 BUICK LeSABRE - 350 V8, a/c, 4 dr., p/s, p/l, am/fm, good cond., $1,800. Ext. 7795 or 589-8331.

80 OLDS TORONADO - red, V8, diesel, all power, orig. owner, clean, $3,500 neg. Ext. 3794.

81 PONTIAC PHOENIX - htchbk, new tires, shocks, fuel pump, excel. value, $1,200. Ext. 4360.

74 CHEVY VEGA - dependable, local transp., $300. Tom, Ext. 4453 or 473-8739.

71 DODGE DART - 2 dr., 160k mi., $300. Ext. 4623 or 751-2733, eves.

TIRES/RIMS - (4) 13" Datsun on alum. slots, good cond., best offer. 698-1184 after 6 p.m.

76 VOLVO - station wagon, high mileage, body excel., taupe, seats 7, motor needs work, $1,995. 475-5430.

85 CHEVY CAVALIER - a/t, am/fm, a/c, 5k mi., $5,800; 81 Toyota Starlet, am/fm, 5 spd., 2 dr., htchbk, $2,800. John, Ext. 3292.

74 DODGE DART - for parts, many new parts, good tires, new muffler, self moving. Jurg, 821-3243.

67 CHRYSLER WAGON - loaded, collectible, needs brakes, exhaust, handyman, home, make offer. Fred K. Ext. 7947 or 588-2268.

Boats & Marine Supplies

23' SABRE - 1966, fiberglass, I/O, 150 h.p., new top, orig. owner, mint cond., 265-2574.

29' ULRICHSON - fly bridge, fwc, galley, head, sleeps 5, new canvas, many extras, must see, $5,500. 732-2754.

23' AQUARIUS SAILBOAT - 3 sails, 7.5 h.p., Evinrude outboard, good starter boat, $3,500. Manny, Ext. 7578.

37' HUNTER - 1981 fiberglass, tri-cabin layout, sleeps 7, 30 h.p. diesel, like new. Cheryl, 595-1536.

21' BAYLINER - 1986, Cierra, sleeps 5, 135 h.p. Volvo I/O, full canvas, $19,000. 878-0480, eves.

22' CATALINA SLOOP - 1982, swing keel, many extras, excel. cond., $7,000. Ext. 7518 or 589-5490.

19' F.G. LIGHTNING SAILBOAT - w/trailer, excel. cond., $2,500. Bob W., Ext. 7197 or 399-1679.

ANCHOR - for small boat, $25. Ext. 4309.

14' BOAT - aluminum, good shape, $200. 475-4199.

Miscellaneous

STOVES - G.E. elec., 22" gold, used, $75; 30" gas stove, white, new, $200; Panasonic microwave oven, hi-power, large, $100. Cris, 475-8456 after 6 p.m.

BICYCLE - 22" Chiorda, mens, $60. Corinne, Ext. 4493 days or eves.

CHINA CLOSET - 5', walnut contemporary top, 4 glass panels, 2 doors, 3 drawers, excel. cond., $200. Ext. 2529.

3M DISKETTES - 5¼, ds/dd, new $10/10; portable typewriter, $20. Jim, Ext. 3372.

SWIVEL ROCKER - padded, $40; recliner, $40; sofa, w/loose cushions, $75; elec. Metronome, $35; G.E. refrigerator, $65. Sal, Ext. 2460 or 744-9822.

ELECTRIC GUITAR - Aria Pro II, hard case, whammy, new cond., $160. Dave, 821-0250.

LAWN MOWER - 21" Lawn Boy, needs tuneup, side bagger, light-weight magnesium frame, $100. 744-9429.

PUMPKINS - all sizes, you pick, Saturdays & Sundays throughout Oct., Meadows Farm, Beaver Dam Rd., Brookhaven.

TANK - 82 gallon, for well, $50. Janet, Ext. 2345 or 929-8152.

RADIATOR - (1) cast iron, 36"x15"x5", (1) 14"x42"x11", $8./each. Henry, Ext. 3084.

STROLLER - twin, $30; carriage, good cond., $15. Walter, Ext. 3397 or 567-9025.

SCREENS - (7), wood, 55x27½"; (5) storm windows, 55x27½", $4./each. Henry, Ext. 3084.

DISHWASHER - Whirlpool, portable, good cond., $50; twin bed boxspring and mattress, used, $10, Ext. 3007 or 281-5076 eves.

MATTRESSES - (2), w/boxsprings and frames, new, August 9., $400. for all. 821-0784 after 6 p.m.

TRACTORS - (1) Farmal Super "C", gas; (1) B-275 International, diesel, 3-pt. hitch, plow disk, rake, etc. $12,000. Jim, Ext. 4040 or 289-0876.

XMAS OUTFIT - boy's, red velvet, size 18 mo., worn once, $7; girls 3T velvet dress, $10. 744-9677.

GIRLS BIKE - 20" Columbia, great cond., training wheels, $35. 286-0259.

STEREO TURNTABLE - needs work, 8 track, speakers, am/fm radio, good cond, $40. Loretta, 929-8287.

FIREWOOD - split, seasoned, quality hardwoods, pickup near lab in small or larger amounts, $125 full cord. Tom, Ext. 4084 or 878-1060.

SCOTT STEREO RADIO - FM only, ideal for Dorm, needs only 2 speakers, $40. Ext. 4680 or 286-1331 after 5 p.m.

BETA RECORDER - Toshiba, portable w/camera, $600; Sanyo tape deck, dolby, metal tape, $50; 70 gal. fish tank, accessories, $50. 727-4859.

CRANE COAL STOVE - triple insulated, w/piping, $500 neg.; 1916 Richmond upright Grand Piano, good cond., music rolls incl. $2,000. 286-1787.

AIR CONDITIONER - Chrysler, 11,000 Btu, wall unit, 110 volts, $50; West Bend Vaporall humidifier, excel. cond., $35. Ext. 4446.

SOFA BED - brown vinyl, queen size, new, $200; 4 Toyota tires and rims. $100; Monster weight bench, $50. 472-0029.

GATE LEG TABLE -w/2 leaves, 46"x72" plus (2) 10" leaves; Farberware convection turbo oven. 475-0509.

MOVING SALE - Sat. Oct. 11, 6 Woods End Rd., Dix Hills, 19" TV, Q-size bed, dressers, tricycles, infant car seat, more. Ext. 3524 or 491-0753.

MOVING SALE - 13" color TV, 1 yr. old, $120; student desk, $5; beach chair, $3; shelves, $10. Ext. 3016 (apt.)

VACUUM - Hoover upright, w/attach., $55; 2 sets twin beds, $45/ea.; assorted sofas; Sears belt sander. 722-3338.

CRIB - mattress and dresser, Simmons, good cond., $125. 567-9025, eves.

REFRIGERATOR/FREEZER - Sears, 15 cu. ft., frost-free, harvest gold color, $175. Joe, Ext. 2898.

MATERNITY CLOTHES - size 12, good cond., jumpers, dresses, pants; $10 for all. 751-3551.

MEN'S SKIS - 205 cm; women's skis, 185 cm; ski boots, men's 10 med; women's 7 & 8. Ext. 2557.

CHAIN SAW - Stihl, 14" bar, 2 cu. in., good cond., $50. 744-4611 after 6 p.m.

DOLLS - assorted from collection; (2) pine twin bed frames, complete. 727-0082.

GENERATOR - 5KVA Powermate set, new, in box, $695; king, queen size comforters, all colors, $39. Medina, Ext. 7635 or 654-3472.

STEREO - power amplifiers, QSC-A31, 125w /chann., $225; QSC-A51, 80w /chann., $175; recorder, Dokorder 7140, open reel, multi-track, 4-meters, echo, line/mike, mixing, $125. Ext. 5110.

DINING TABLE - w/insert and board, 6 chairs, beautiful wood, $400. 286-1213 wknd and eves.

JAPANESE YEWS - Taxus Cuspidata Capitata, 2½', transplant, $15/ea. 589-4363 after 6 p.m.

MAGAZINES - 1 box of Chevy Hot Rod, best offer. 698-1184 after 6 p.m.

CHINA CABINET - glass doors, $75; GE white refrigerator, $55; maple lamp/table, $35. 744-9822.

FURNITURE - Early American, maple, Colonial, 5' loveseat, and 7' sofa, removable print cushions, $450. Frank C. Ext. 4581 or 277-0464.

PROJECTOR - slide film, Sawyer, autofocus. 744-0986.

Yard Sales

BELLPORT - Oct. 11 & 12, 9:30-3:30, 12 Maple Ave., contents of house, tools, etc., between Association & Head of Neck Rd. Joe, Ext. 3569.

LAKE PANAMOKA - 23 Corchaug Trail, Oct. 11-12, 10 a.m.-4 p.m., priced low everything must go.

PATCHOGUE - garage sale, huge; antique furniture, misc., Oct. 11, 171 Swan Lake Drive, Patchogue.

Free

KITTENS - 2 males, ready to go. Dave, Ext. 3093 or 281-0062, eves & wknds.

FIREWOOD - you cut, you take. 281-7844.

OIL TANK - 275 gal., clean, you pickup. 732-8837.

DESK - armchair, chest of drawers. 744-0986.

Car Pools

SETAUKET - need ride (will pay) or share rides, 8:30-5:00 p.m. Arnold, Ext. 2434 or 751-2690.

MASTIC - need ride to/from Lab., 8:30-5:00 p.m. shift, will pay. Jody, Ext. 2907 or 395-3963 after 6 p.m.

HOLTSVILLE - or vicinity. Avraham, Ext. 7696.

Lost & Found

FOUND - "Benji"-type female dog on 10/7, in area of women's dorm, gray, no collar. Bob, Ext. 3145.

Real Estate

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

For Rent

HILTON HEAD, SC - 2 bdrm. condo, sleeps 6, many extras, beach, pool, tennis, golf, fall special, Lab employees & families only. $300/wk, $200/5 days. 585-9149.

CENTER MORICHES SO. - 3½ lg. rms., priv. ent., full bath, new refrig., carpet, no children/pets, 1 mo. sec., 11/1 occupancy, $575/mo. pays all. 878-0480 eves.

AQUEBOGUE - 3 bdrm. ranch, OHW heat, ⅓ acre, fenced in yard, 1½ car garage, all appliances, $750 mo. + util. 722-3338.

MEDFORD - immaculate, comfortable 3 bdrm. ranch, l/r, eik, 2 baths, fin. bsmt., fenced ½ acre, attached 2 car garage, 3 miles to Lab. Ext. 2487.

SHIRLEY - 2 bdrm. apt., furn. or un furn., priv. ent., walk to beach, 10 min. from Lab, security, heat inc., $650 + util. 399-1250.

NORTH SHIRLEY - 2 bdrm., eik, l/r, washer, priv. ent., security, ref., 5 mi. to Lab, $600 inc. all. Ron, Ext. 3198 or 744-8577.

CENTER MORICHES SO - 3½ lg. rooms, priv. ent., full bath, new refrigerator, carpet, no children/pets, 1 mo. security, 11/1 occup., $575 mo. pays all. 878-0480, eves.

MASTIC BEACH - ⅛ mi. from water, 2 bdrm house, l/r, kit., porch, $525 mo. plus util. Ext. 4979 or 395-1043.

SETAUKET - 3V schools, 3 bdrm., fam. room, 2 baths, fp, patio, quiet street backs on greenbelt, $1,050 mo. 689-7487, eves.

PATCHOGUE VILLAGE - lg. studio apt., priv. ent., furn., mature non-smoker, please, $400 mo. inc. util. 475-3598.

ROCKY POINT - 2 bdrm. house w/full bsmt. and lg. yard, $600 + util. Ext. 4516 or 744-8901 after 6 p.m.

QUOGUE/FLANDERS - new 3 bdrm., study, huge l/r, d/r, fam. room, w/fp, eik, w/w, 8 min. to ocean, 20 min. Lab. Ext. 4112 or 727-1782.

MOUNT POCONO - chalet, fall/winter, weekly, wknd. rates, 3 bdrm, furn., lake, pool, tennis, horseback, ski at Camelback. Ext. 3164.

VERMONT - vacation, 3 bdrm. house, fp, fully equip., beautiful view, downhill and x-country skiing, reasonable, family oriented, avail. weekly or wknds. 732-6499 after 6 p.m.

For Sale

SHOREHAM NORTH - 4 bdrm., Colonial, 2½ baths, den, f/p, bsmt., fenced, patio, formal dining rm. 744-1750.

BELLPORT - 3 bdrm. split level, eik, dinette, l/r, den, attached garage, all alum. siding, fenced back yard, 80'x185'. Joe Ext. 3569 or 286-9560 after 6 p.m.

SHOREHAM - 3 bdrm. ranch, l/r, d/r, eik, patio, heavily wooded, 1 acre, taxes $1,200, SWR schools, $129,000, firm. Ext. 7786 or 744-7796 after 6 p.m.

CALVERTON - condo, 4 bdrm., all appliances, wall to wall, all new Anderson windows, 12'x18' deck in bar, close to Lab, $79,500. 878-2233.

MEDFORD - 3 bdrm, ½ fin. bsmt., above ground pool, ½ acre, treed lot, dead end, $122k. Ext. 3164 or 654-4245.

ROCKY POINT - 3 bdrm. ranch, l/r w/fp, solar fam. room, full bsmt., deck, town water, treed parklike, lg. play area. 744-7708.

MILLER PLACE - no. of 25a, spacious cape, fp, oak floors, serene treed bkyd., ½ acre, know the area, know a good buy. Ext. 2529 or 473-7902, eves.

Wanted

PEOPLE HELPED BY UNITED WAY - willing to have their stories used in the Bulletin to encourage donations. Liz, Ext. 2346.

SOPRANO - to sing with on-site octet. John, Ext. 2617 or Janet, Ext. 2345.

RIMS: 1984/85, Madza, RX-7, GSL-SE; Bought new rims? I'd like your stock rims, reasonable. Bob, Ext. 3145.

FORD PARTS - for 1968 to 1971. 727-0082 after 6 p.m.

HOUSEMATE - bright room, own bathroom, in Westbury house. Carpool to Lab. Fernando, Ext. 5409.

RIDE - to Stony Brook, morning and back, evenings M-W-F, help with gas. Angela, Ext. 3114.

PAINTER - for rust proofing exterior metal, grill work. Ext. 2492 or 475-8658 after 6 p.m.

DESK - slant top, secretary, or Governor Winthrop style. Peter, Ext. 2824 or 727-3218.

TRAVEL TRAILER - 14' to 18', not a pop-up. H. Sauter, Ext. 3783.

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

TV - black and white. Akos, Ext. 2288.

HOUSEMATE - female, pref. non-smoker, own room, share house, Mastic, $200 mo. all. Pat, 281-0973, eves. & wknds.

14" RIM - for Chevy must be usable over disk or drum brakes. Morris, Ext. 4192.

Ads left out of this issue due to lack of space need not be re-submitted to appear in the next issue.

Classified Ad Policy Deadline is 4:30 p.m. Friday for publication Friday of the next week.