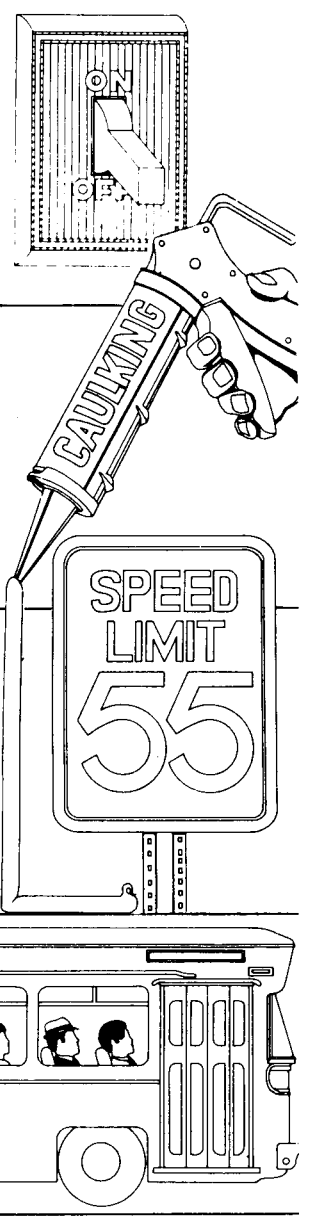
BROOKHAVEN BULLETIN

Volume 33 - Number 39 / October 5, 1979
BROOKHAVEN NATIONAL LABORATORY

INTERNATIONAL ENERGY CONSERVATION MONTH

The United States is participating with 19 other major industrial nations, all members of the International Energy Agency, in observing October 1979 as International Energy Conservation Month. The following energy conservation advice is good not only for October, but for the year round.



1 MON — Buy products packaged in materials that can be recycled or reused – steel, aluminum, paper, and glass.

2 TUE — Share a ride to work or shopping with a friend.

3 WED — When shopping for an unusual item, telephone ahead to see if the store has it.

4 THU — Observe speed limits.

5 FRI — Insulate your attic, if you have not done so already. The greatest heat loss or gain in most homes is through the roof.

6 SAT — Ride the bus. Urban automobiles consume more than twice the energy per passenger mile than buses.

7 SUN — Service your furnace, especially if it's an oil burner.

8 MON — Don't idle your car motor for more than 30 seconds – that's all it needs to warm up.

9 TUE — Install storm windows. They reduce your heat loss and your annual fuel costs.

10 WED — If you're in the market for a new car, pick one with the best mileage economy in its class.

11 THU — Turn off unnecessary lights, appliances, and televisions.

12 FRI — Change your car oil and oil filter at recommended intervals. Use multi-weight oil; it increases fuel economy.

13 SAT — Lower your thermostat at least 2 degrees and your water heater to 110 degrees (low).

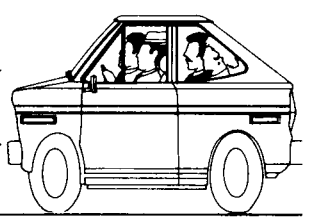
14 SUN — Walk or ride a bike on short trips. You'll improve your physical fitness while you save money and energy.

15 MON — Use shower flow restrictors to reduce water and energy consumption. Showers use less hot water than baths.

16 TUE — Vacation closer to home.

17 WED — When cooking, make one dish meals. Avoid preheating your oven whenever possible.

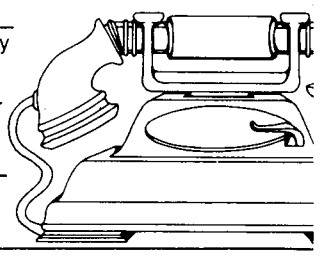
18 THU — Accelerate gradually, and don't brake unnecessarily. Braking cuts your fuel economy.



19 FRI — Use the most energy efficient appliance for household tasks. Frost free refrigerators use more electricity.

20 SAT — Get regular tune-ups. Your car is losing mileage if the engine is difficult to start, hesitates, or idles roughly.

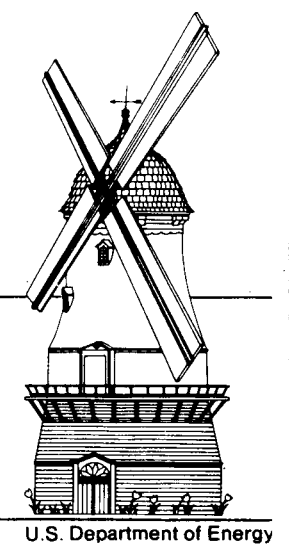
21 SUN — When replacing lightbulbs, don't use bulbs that are stronger than necessary.



22 MON — If you have to replace your car tires, buy radials; they improve gasoline mileage.

23 TUE — Do your laundry in cold water. If you need to wash with hot water, you can still rinse with cold water.

24 WED — If you have more than one car, use the one with the best fuel economy.



25 THU — Install a solar water heater to save money and energy. Tax credits can cover up to 30 percent of the costs.

26 FRI — Plan your trips. Try to make one multi-stop trip rather than several single-stop trips.

27 SAT — Eat nutritious foods. Processed foods require more energy to produce than they supply to the consumer.

28 SUN — Check tire pressure regularly; keep tires inflated to the highest pressure recommended by the manufacturer.

29 MON — Make a grocery shopping trip without buying any items packaged in non-reusable plastic.

30 TUE — Remove unnecessary weight from your car; added weight hurts fuel economy.

31 WED — Plant deciduous trees and vines to let the sun enter your house in the winter and to provide shade in the summer.

U.S. Department of Energy

Crystal Balls In Our Fuel Future?

Hydrogen is the second most abundant element in the world. As a gas, it is colorless, odorless and tasteless. Since the product of hydrogen combustion is primarily water vapor, hydrogen is a clean energy source. "In less than a century, hydrogen will fuel this country." So predicts Matt Rosso, Division of Energy Storage and Conversion, DEE.

Brookhaven is involved in three phases of hydrogen research: production by electrolysis, storage in metal hydrides and microspheres, and end use in fuel cells and conventional combustion devices.

Since 1966, Jim Reilly and Dick Wiswall have developed a number of metal hydride materials, including magnesium nickel and iron titanium, while working in the Division of Chemcal Sciences, headed by Don Metz. Metal hydrides have attributes that make them useful for applications other than storage, for example, chemical compressors and heat pumps. In 1972, the Division of Energy Storage and Conversion, headed by Frank Salzano, became involved in the engineering scale testing of metal hydride systems, and this division is now investigating this new hydrogen storage technology.

Storage of hydrogen in microspheres is a new idea, and Brookhaven is the only national lab developing it. The project is just two years old, not time enough to predict success, but with the promise of a hydrogen-fueled future, Rosso feels that microscopes have a high potential payoff and the concept deserves further investigation.

Microspheres are minuscule hollow glass spheres ranging in size from five to 150 microns and can be used to store hydrogen at pressures up to 6000 pounds per square inch. Medium-sized microspheres are about the diameter of a human hair.

Brookhaven's microsphere research is related to energy and is funded by DOE. The idea of hydrogen storage in microspheres was first proposed in 1977 by RobertTeitel, a former employee of the Lab. Teitel's San Diego company has a BNL contract to characterize microspheres available on the commercial market. Work at Brookhaven is broader in scope, investigating the storage medium on a larger, engineering scale. The Hydrogen Technology Advanced Component Test System, which has been used in testing metal hydrides, is being modified to handle pressures necessary in working with microspheres. According to Mike Bonner, who shares responsibility for the facility, BNL will test the performance of storage vessels containing microspheres.

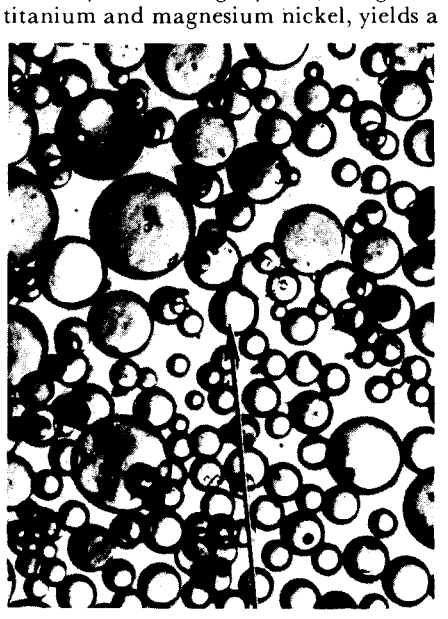
Microspheres are commercially made by mixing a batch of glass with something that generates a gas. The glass is melted to 600 degrees Centigrade, and sprayed out like perfume from an atomizer. As it cools, it blows up into individual glass beads.

Not all microspheres are intentionally produced for sale on the market. In coal combustion, fly ash is a waste product, and a large percentage of fly ash is glass microspheres. When fly ash is discharged onto a body of water, the glass beads float on the surface while everything else sinks, making collection possible by skimming them off the surface. Rosso remarks, "Companies would love to get rid of the fly ash. What better way?"

To fill microspheres with hydrogen, a bed of beads is heated to temperatures up to 350 degrees Centigrade (662 degrees Fahrenheit). Hydrogen is then applied under pressure; it permeates through the glass walls at this high temperature, and when the beds are cooled down, the gas is trapped inside the hollow spaces of each bead.

Temperatures of 100-200 degrees C (212-392 degrees F) are required to release hydrogen stored in microspheres. Because automobile exhaust temperatures cover that range, this system seems feasible for automobile use. Enough hydrogen to start the car is trapped in spaces between the beads. Then the exhaust would be used to heat the microspheres, releasing the hydrogen as needed. "As possible as it all seems, however, hydrogen stored in microspheres will probably not be used in personal vehicles for a long time," says Rosso. "Refueling microspheres requires pressures too great to be internalized in cars." Since refueling is best done in one central location, Rosso thinks that hydrogen filled microspheres would be an appropriate energy source for fleet-type service, such as taxis and buses. Hydrogen is also a good fuel for fork lifts and mining vehicles because of the environmental problems associated with the use of hydrocarbon fuels. Rosso feels that hydrogen is more desirable than battery powered vehicles, which have less power and need to be recharged overnight, preventing round the clock shift work.

Gerald Strickland, who shares with Rosso responsibility for microsphere research, says that in some applications, hydrogen storage in microspheres may have an advantage over storage in metal hydrides, for example where weight is a consideration. Rosso has made some comparative calculations for a standard four passenger vehicle with a 150 mile range. The state of the art metal hydride storage system, using iron titanium and magnesium nickel, yields a



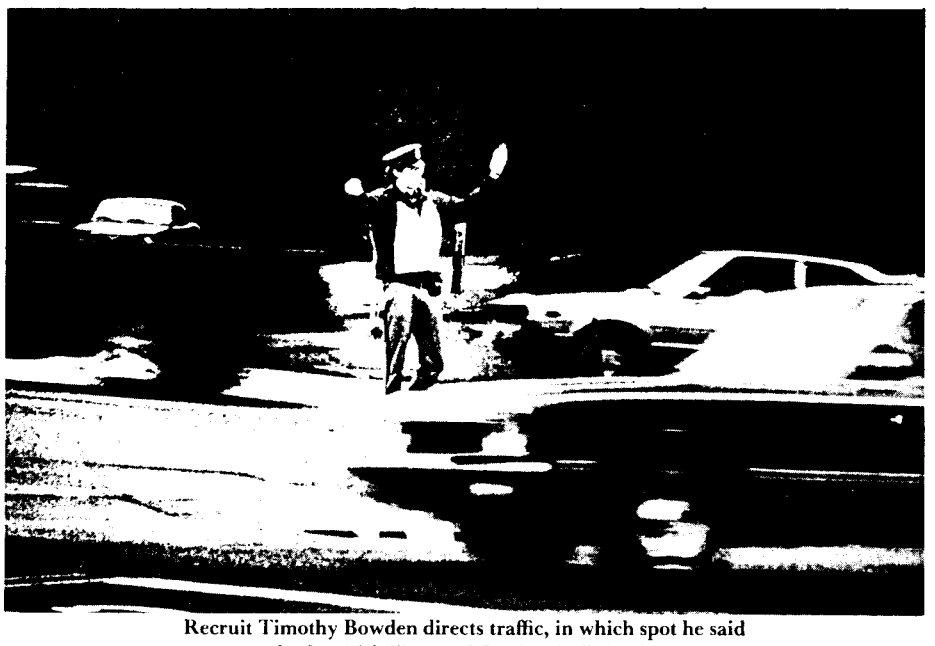
Enlargement of glass microspheres used to store hydrogen. Microspheres range in actual diameter from five to 150 microns. The arrow points to a microsphere the diameter of a human hair. A thimble would hold four million.

reservoir which would weigh about 1200 pounds. By comparison, an equivalent reservoir of hydrogen stored in microspheres would weigh 500 pounds, and the cost of storage in beads is projected to be less than half that of storage in a metal hydride. Iron titanium costs between $3.00 and $4.00 per pound, and microspheres cost $0.30 per pound.

Calculations comparing gasoline with hydrogen fuel, not including storage costs, show that gasoline costs $7.50 per million BTU's and hydrogen ranges from $7-12 per million BTU's, depending on the production technique used. "But if you think hydrogen sounds expensive, consider the dollar value of using it to gain independence from other nations and add that to the price of gas," says Rosso. "Also, think about the environmental benefits derived from using hydrogen. With all these considerations, hydrogen could become economically competitive."

Hydrogen is a secondary energy source; a primary source is needed to generate it. Rosso feels that the only way hydrogen can become the major national fuel is to have an unlimited supply of electricity generated by some non-polluting technology such as solar or fusion. A futuristic idea links hydrogen filled microspheres with OTEC, Ocean Thermal Energy Conversion. OTEC uses the temperature differences that exist in some parts of oceans between surface water and deep water. These thermal differentials provide enough energy to drive a heat engine, which can generate electricity. Out in the Atlantic Ocean, OTEC plants would have to be located in the Gulf Stream, which varies in location year to year, and in many cases, a

(Continued on page 3)



Recruit Timothy Bowden directs traffic, in which spot he said he first "felt like a red flag in a bull ring."

Lab Police Aim To Help, Not Hassle

When Lab police go through their initial training, the emphasis is on helping the Lab to run as smoothly as possible, not to give anyone a hard time. Naturally they have to be aware of potential serious problems and be trained to handle them. They must take violations seriously and, at the same time, be diplomatic in the way they handle certain situations.

The training of newcomers to the force is the responsibility of Lt. Kevin Clark, who has been with the Lab for about two-and-a-half years. He succeeds Bernard Doran who is now Capt. of Squad A. Clark holds an associate's degree in criminology from Suffolk Community College and a bachelor's degree in sociology and criminology from SUNY, Plattsburgh.

"The thing that makes Brookhaven unique," says Clark, "is that it has a university environment, but also includes important national facilities. Like a university, you can go most places at will, but we have to walk a fine line in explaining to people that they just can't do anything they like."

The basic training of new recruits lasts three months, then they are assigned to one of four squads. Once on the squad, they are not considered fully trained until they have been on the job for six months to a year.

New recruits now undergoing training are Richard Auspaker who was on security detail at SUNY, Stony Brook, and Timothy Bowden, who formerly worked for an armored car company.

The program they are following is outlined by DOE for national laboratories, but developed in detail by BNL for its particular use. It has a number of parts.

The one that Auspaker and Bowden find most challenging is the training in firearms, neither of whom knew one end of a gun from the other before they started. They agree that "it isn't as easy as it looks on cop shows." They must qualify in the handling of handguns, rifles and shotguns, both during the day and at night. To do this they practice daily, and also learn in what situations it is permissible to use a gun and when it is not.

A part of the course they find the most boring is fingerprinting which takes more practice than one would think. It's tiresome because if it isn't done right, the prints are sent back and the procedure must be done again.

Some of their practice in this area is gained by fingerprinting fellow officers all of whom have "Q" clearances because they must have access to everything on site. Fingerprinting is also done at Police HQ for staff members who are required to have security clearances. All police have extensive training at the HFBR and they are also responsible for destroying classified material and making sure that the job is done properly.

Directing traffic is, of course, another part of the policeman's lot. Before Bowden took his first stand at an intersection, he had thought that directing traffic would be easy. However, he said that "you feel you are the red flag with the bull in the ring," and after he nearly got himself run over, he learned to be wary. Auspaker noted that traffic control is easier when employees are coming to work because they are relaxed and take their time. But when going home, they barrel on out and the police have to keep on their toes.

Familiarity with the site and the location of all buildings is one of the first things recruits have to learn. They visit one area at a time, finding out about the principal buildings, noting fire alarms, etc. "The AGS is a maze," says Auspaker. Then they must drive an examiner around and properly identify what they have seen.

Gate procedure is another part of the course - who you can let in and who has to be questioned. At 8 p.m. the gates are closed and no one is admitted unless they can show proof that they have some reason to be on site.

Police are on duty around the clock and work three shifts. The 4 p.m. to midnight is a busy one. During the night they make sure that the buildings are locked and keep their eyes open for any unusual situations.

Training Officer Lt. Kevin Clark (left) instructs new recruit Richard Auspaker in the use of firearms, a part of the course in which daily training is a must.

Occasionally, they even have use for a nightscope. This is a device used in the dark which allows them to focus on an area some distance away without being observed.

The recruits also receive special training in such areas as CPR (Cardiac Pulmonary Resuscitation), but there is still one larger area with which they must deal. It is common to all organizations, and that is the filing of reports. Here the reports are classified as crime (mostly theft); accidents (involving either government or private vehicles); aided (assisting on injuries) and panel alarms (notifying departments of possible power failures, etc.). Barney Brennan, who supervises the Police Group notes that more crime reports are filed over the weekend than at any other time.

The physical fitness exam mandated by DOE is not usually a problem. As Clark says, "most new recruits can pass it the first day they are here."

So the Police Group is constantly trying to upgrade its performance and make new recruits aware of the nuances involved in working at an institution like Brookhaven. Aiding foreign visitors is an example. Trainees Auspaker and Bowden are aware that some visitors may have language problems and lack knowledge of the local customs. They feel they are there to help.

To sum up, as Clark says, "we are not here to ride herd on anybody, but people must conform in some ways. Sometimes this is difficult for Lab police, because even though they are trying to help in a situation, they are still looked on as cops trying to give somebody a hard time." Old attitudes die hard.

BNL's New Sergeant

Donna LaSalla

Donna LaSalla, who has been with the BNL Police Group since 1975, has just been promoted to Sergeant. She is the first woman in the history of the force ever to achieve this rank and, according to Barney Brennan, supervisor of the Police Group, "it was a well deserved promotion. She earned it."

As Sergeant, Donna is a communications officer and she handles the HQ desk for her squad, which is under the direction of Capt. Baer. She holds an associate's degree in criminal justice from Suffolk Community College and, before her promotion, had chalked up 500 hours on the desk. Now, communications will be her sole responsibility.

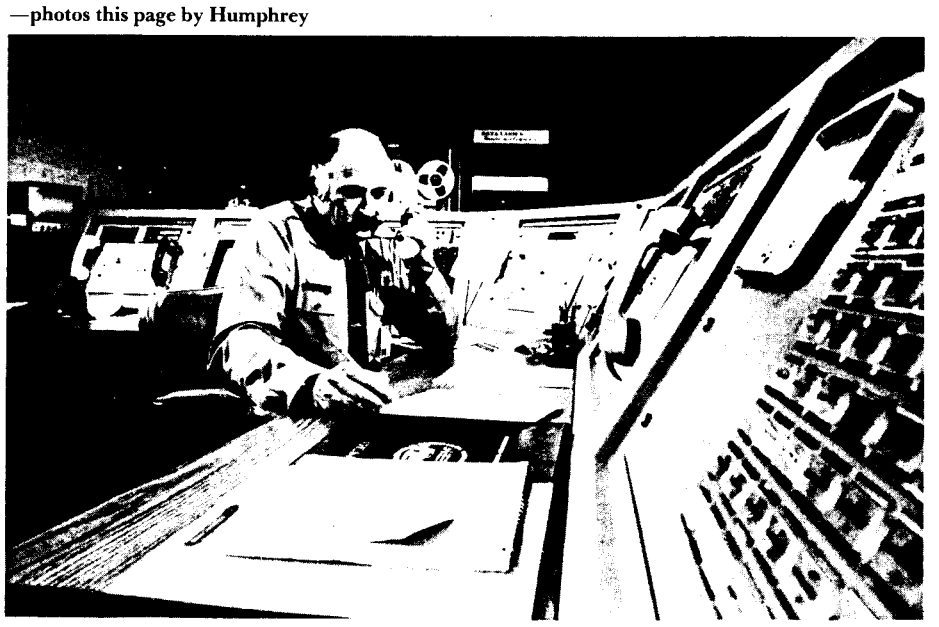
On the BNL security force, women have the same jobs as the men, and work all three shifts. During the last four years, Donna has enjoyed tackling the various aspects of Lab police work. "It's something different every day," she says, "and you feel you're where the action is."

Her longest tour of duty came in February 1978 when she was on the job for three full days because of the big snow, and relief staff could not get in. It was hectic, and "we had no change of clothes or toothpaste," she says, "but we all worked together and were able to help people in trouble."

Coming to Brookhaven has also been a happy experience for Donna, in another way. Two years ago she married BNL Firefighter Chuck LaSalla. How do they ever manage to see each other? It works out all right, she says, because the Fire Dept. has a different pattern of shifts and so there are always times when they can be together.

In addition to Donna LaSalla, there are five other women currently on the force. They are Patrol Officers Susan Rackett, Pat Cahill, Gail Lukas, Beverly King and Cathy Vanderoef.

—photos this page by Humphrey



P.O. Harvey Richardson, who has been on the force since 1963, takes a call at the console where all alarms are received. The alarm portion of the console is now computerized and further computerization is in the works. This is not Richardson's normal beat, however. He was just filling in during a coffee break for the duty sergeant who normally mans the desk.

A Magical Evening

Although Berkner Hall was more than filled by the five hundred persons who heard the Juilliard String Quartet open the 1970-80 BERA Concert Series on September 20, the deficit for the concert has already exhausted the funds granted BERA in support of the series by the New York State Council on the Arts for this year.

In order to raise additional revenues and comply with the State Council's requirements, a fund raising event will take place at 8:30 p.m. on Tuesday, October 16 in Berkner Hall when Ingmar Bergman's much acclaimed film version of Mozart's "Magic Flute" will be shown. This delightful presentation has been described by Pauline Kael in The New Yorker as "a blissful present. . . a model of how opera can be filmed. . ." Judith Crist wrote in The Saturday Review ". . . it is a joyous entertainment, testimony to Bergman's contention that making the film was the best time of my life. . . it's a sugarplum for anyone."

It is hoped that all music lovers will attend and make as large a contribution as possible. All donations are tax exempt and a minimum contribution of $3 per person is suggested.

In Memoriam

Jerold S. Opkins, a Senior Project Engineer in the Brookhaven Area Office of the Department of Energy, died suddenly of a heart attack on Tuesday, October 2. Hopkins had been at Brookhaven for more than 18 years. He was project engineer on the construction of many BNL projects, and had participated most recently in the building of the Inhalation Toxicology and National Synchrotron Light Source facilities. He held a master's degree in mechanical engineering and was a Registered Professional Engineer in the State of New York. He is survived by his wife Helene, two sons, Steve and Rob, his mother, and one grandson.

Word has been received that Theodor Korsos, who retired from the Instrumentation Division in 1970, died on August 30, 1979 at Brookhaven Memorial Hospital.

Speakers Bureau September

R.C. Anderson (DO), Nassau County Region of Hadassah, "Energy Options for the Future," September 10.

Lewis Jacobson (PE), Central Federal Savings in Brentwood, "How to Cut Costs on Your Home Heating Bills," September 12.

Carl Thien (DO), Suffolk County Police Academy, "Transportation of Radioactive Material," September 14.

Meyer Steinberg (DEE), Huntington Jewish Center, "Energy Problems and Some Solutions," September 17.

Edward Murphy (PE), Central Federal Savings in Long Beach, "Turn Down the Heat on Home Energy Bills," September 27.

J. Keith Rowley (Chem.), Custer Institute Astronomy Group, "Wanted: 50 Tons of Gallium," September 29.

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Microspheres (Cont'd)

suitable site may be hundreds of miles from shore, making power lines or pipes unfeasible. Instead, Rosso points out, sea water can be electrolized at the plant to obtain hydrogen, and the hydrogen can be stored in microspheres and barged ashore.

Another possible application for microspheres is in the cross country distribution of hydrogen. Hydrogen is widely used in industry as a chemical for such processes as refining petroleum and making vegetable oils and fertilizers. Presently, it is transported in very heavy, high pressure, compressed gas tubes. Rosso thinks that replacing these tubes with microspheres in light weight containers could reduce the cost of distributing hydrogen. "Transportation cost is one factor holding back the use of hydrogen," says Rosso. "Microspheres look like they may be an attractive solution."

Hydrogen may play a large role in our energy future. Storage in microspheres is a new idea in very early stages of development, but Rosso feels that more research is needed to define the role microspheres will play in the hydrogen economy of the 21st century.

For Easy Shopping. . .

The Exhibit Center has a well-stocked Science Shop that will be open Thursdays, and Fridays, October 11 through November 16, 10 a.m. to 2 p.m. The hours are maintained for the high school science tours on site, but Lab employees are invited to come and shop, too. Most of the items carried are science-oriented, all priced under $5.00.

The Science Shop is in the Exhibit Center, Building 701.

Locker Users Reminder

Gym/pool locker rooms and lockers (men's and women's) are due to be sprayed with an insecticide this evening at 10 o'clock. Users are requested to remove contents of lockers and leave doors open.

The Recreation Office will not be responsible for damage or loss of any articles left in locked lockers.

Normal usage may be resumed on Saturday, October 6, after 1:00 p.m.

Arrivals & Departures

Arrivals

William J. Behrens	Energy & Env.
A. Bertrand Brill	Medical
Susan T. Carlsen	Safety & Env. Prot.
Beverly E. Clark, Jr.	Nuclear Energy
Israel Dostrovsky	Chemistry
Motokuni Eto	Nuclear Energy
Gregory M. Gowdy	Physics
Albert L. Hanson	Physics
Kenichi Harigaya	Medical
Steve M. Heald	Energy & Env.
Glenn H. Jochen	Accelerator
Timothy M. Kirkpatrick	Accelerator
Amy Kronenberg	Medical
John D. Nally	Energy & Env.
Aristodimos J. Philippacopoulos	Nuc. Energy
George Privitera	Accelerator
Pranab K. Samanta	Nuclear Energy
Felix Schauer	Accelerator
Peter G. Sherman	Energy & Env.
Walter F. Stoeber	Physics
Thomas F. Vogt	Medical
Thomas W. Weedon	Accelerator
Mary Winkels	Tech. Info.

Departures

Ian U. Heilmann	Physics
Masao Hisatome	Energy & Env.

Attention Diners

The Cafeteria will be closed on Saturday, October 6th. On that day, Snack Bar service will be available from 9:00 a.m to 2:00 p.m. at the Brookhaven Center.

New York Train Trip

The Hospitality Committee is planning a group railroad trip to the city on Wednesday, October 17. Departure will be at 7:55 a.m. from the Patchogue LIRR station. Round-trip fare for adults is $2.45, 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**, October 11. Make checks payable to "Brookhaven National Laboratory." Your tickets will be given to you on the train. Refunds will be made only if cancellations are received by the Friday preceding the scheduled trip.

Cooking Exchange

Come join us at the next meeting of the BNL Cooking Exchange for a sample of "vegetarian vittles" – a great way to fight inflation! Cooking demonstrations for these epicurian delights will be featured at the Recreation Building from 12:30 to 2:30 p.m. on Wednesday, October 10. Babysitting is provided at 25¢ per child.

For more information contact Sharon Galayda at 821-0644 or Wendy Green at 878-8952.

Tennis

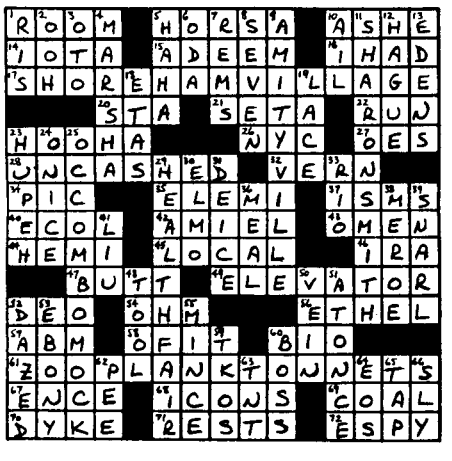
The awarding of the BNL Tennis Tournament Championship trophies, the Allan Auskern Men's Singles Cup, the Walter Merkle Men's Doubles Cup, and the "Satellite" Tournament trophy, will be held in Room A of Berkner Hall on Wednesday, October 10th at 12:15 p.m.

Cafeteria Menu

Week Ending October 12, 1979

Monday, October 8		
Tomato vegetable soup	(cup)	.35
	(bowl)	.45
Vegetarian omelet & fr. fr.		1.30
Grilled ham steak & 1 veg.		1.45
Hot Deli – Pastrami	(on bread)	1.40
	(on roll)	1.50
Tuesday, October 9		
French onion soup	(cup)	.35
	(bowl)	.45
Macaroni & cheese w/1 veg.		1.20
Meatloaf & hash browns		1.35
Hot Deli – Corned beef	(on bread)	1.40
	(on roll)	1.50
Wednesday, October 10		
Pepper pot soup w/spaetzle	(cup)	.45
	(bowl)	.55
Tuna noodle casserole		1.25
Southern fried chicken w/corn fritter		1.35
Hot Deli – Veal pattie & peppers		1.35
Thursday, October 11		
Chicken noodle soup	(cup)	.35
	(bowl)	.45
Pork & cabbage crisp		1.35
Manicotti & 1 veg.		1.25
Hot Deli – Baked Virginia ham	(on bread)	1.35
	(on roll)	1.45
Friday, October 12		
Manhattan clam chowder	(cup)	.45
	(bowl)	.55
Fish fillet cheese melt & 1 veg.		1.45
Hot chili con carne on rice w/corn bread		1.40
Hot Deli – Sandwich steak	(on bread)	1.40
	(on roll)	1.50

Answers to last week's puzzle



For A Job Well Done

For their assistance during the Three Mile Island crisis, the following men from Plant Engineering were awarded DOE certificates of appreciation. Left to right are: Ed Miezianka, Tony DePierro, Larry Johnson, Charlie Botts, Charlie Johnson, Nick Cipolla, and Ben Belligan. They handled 47 tons of lead shielding blocks, which were flown down to Pennsylvania. The men were not able to be present for the group picture taken earlier of other Lab and DOE personnel who helped during the TMI incident.

—photo by Humphrey

Basketball

Anyone interested in playing in the 1979-80 Basketball League please report to the gym on Thursday, October 11, at 6:30 p.m. Organization of teams and date of starting season will be discussed.

BGA Golf Tournament

The final BGA golf tournament of the year will be held at the Swan Lake Golf Course, River Road, Manorville, starting at 11:30 a.m. on Wednesday, October 17, Greens fee $5.00. Entry fee $1.00. The tournament is open to all BNL employees, retired employees and spouses. Call John Millener, Ext. 3853, to reserve tee-off times.

The B.G.A. 6th 1979 Tournament Results at Spring Lake were:

Mike Iarocci	1st Low Gross	80
George Waldbauer	1st Low Net	67
John Usher	1st 9 Low Gross	42
Joe DePace	2nd 9 Low Gross	40
Lou Repeta	1st 9 Low Net	32
John Connelly	2nd 9 Low Net	34
Marshall Bull	2nd 9 Low Net	34
Longest Drive	Tom Romano	
Closest to the Pin	Tom Iarocci	

Football

September 17

Slow Pokes 20 - Sweathogs 6

Fletcher Johnson and Jim Lynch scored 20 points between them to lead the Slow Pokes to victory.

Falcons 39 - DEE Generates 7

Jerry Vanderlaske scored two touchdowns for the Falcons. Eric Frak and Wayne Rambo also played well for the winners.

September 20

Roga 32 - DEE Generates 6

Lou Snead threw touchdown passes to Ted Daniels, Dave Lieberman and Dennis Nordstrom to pace the Roga.

Falcons 44 - Sweathogs 20

John Flanagan ran an interception back for a Falcons touchdown.

September 24

Roga 33 - Slow Pokes 6

Don Litcher and Ray Jones played tough on defense for Roga.

DEE Generates 13 - Sweathogs 0

September 27

Roga 32 - Sweathogs 13

Bob Schuman and Leroy James both played a tremendous game for Roga.

Slow Pokes 19 - Falcons 13

Fletcher Johnson and Dennis Weyand did the scoring for the Slow Pokes.

October 1

Roga won by a forfeit over the Falcons and the Slow Pokes over the DEE Generates.

BNL Aviation Club

The Club will fly upstate to observe Mother Nature's art work on Tuesday, October 9. They will fly to Saratoga Springs and stop at Poughkeepsie for a group lunch. *Any employee or friend* who would like to join, call David McChesney, Ext. 3563, or Steve Spencer, Ext. 3401, for details.

The regular monthly meeting will be on Wednesday, October 10 in the Brookhaven Center Dining Room. The business part of the meeting will start at 8 p.m. However, the "social part" of the meeting will start after work in the Snack Bar at the Center and will continue after the meeting.

Runner's Corner

The Roadrunner's 5, 10 and 30 Km Fall Fun Runs will be held this Sunday, October 7 at Berkner Hall. The 30 Km predicted time event starts at 8:30 a.m. while the 5 and 10 Km runs begin at 9:30. All events are free and open to the public. Registration and waiver signing will be held at Berkner Hall just prior to each race. Volunteers are still needed to assist in course marking (Friday noon, Building 703), registration, water stops and timing. If you're interested, contact Ted Landry, Ext. 2959 or Dave Judkins, Ext. 2906.

There will be a New York City Marathon logistics meeting on Wednesday, October 10 at noon in the Conference Room, Building 318. All marathon runners, spectators and bus riders should attend. Bring your lunch.

Money for the club's racing shirts and the marathon hotel room are due this week. Send shirt money to Ted Landry, Building 318 and hotel money to Gus Prince, Building 197C.

In this country alone, fire will take an average of one life every 52 minutes. October 7-13 is National Fire Prevention Week. Be sure to correct fire-inviting habits and hazards at work and at home.

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.

The determination of the best-qualified candidate for available positions will be based upon education, experience and other job-related criteria. Such factors will be evaluated and measured against the demonstrable requirements of the available vacancy, as well as the Laboratory's Affirmative Action objectives.

The Laboratory is committed to a policy of Equal Opportunity in its selection and placement of personnel. Its objective is equality of opportunity in employment, training, and promotion without regard to race, color, religion, national origin, sex, age or handicap.

Each week, the Personnel Office lists new personnel placement requisitions. The purpose of these listings is, first, to provide open placement information on all nonscientific 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, as indicated below. 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 Personnel Placement Supervisor, Ext. 2882.

POSITIONS OPEN: Scientific. 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 - Seek individual to assist BNL Synchrotron Radiation Scientific Head in administrative matters. Candidates should have familiarity with experimental research using UV and/or X-rays; background in physical, chemical, biological or applied sciences. Contact: Dr. Martin Blume, Physics Department.

VETERINARY PATHOLOGIST - Seek Ph.D. in Veterinary Pathology to join inhalation toxicology research group. Contact: Dr. Donald C. Borg, Chairman, Medical Department.

LABORATORY RECRUITMENT: Opportunity for present Laboratory employees.

1128. SECRETARIAL POSITION - Requires AAS in secretarial science or equivalent experience performing general secretarial duties including ability to type technical reports. Will perform administrative and general secretarial duties for Regional Studies Division. Department of Energy and Environment.

OPEN RECRUITMENT: Opportunity for present Laboratory employees and outside applicants.

1129. TECHNICAL POSITION (weekly or monthly) - Requires AAS in mechanical technology or equivalent knowledge of experimental techniques, machine shop practices and data collection. Will assist junior engineers and principal investigators with various solar heating experiments. Department of Energy and Environment.

1130. TECHNICAL POSITION (weekly or monthly) - AAS degree or equivalent with experience in the proper use of hand tools and the ability to coordinate work with others. Experience with leak detectors and cryogenic devices desirable. Occasional shift work. ISABELLE Project/Accelerator Department.

1131. CLERICAL POSITION - To work on reports and manuscripts requiring knowledge of technical typing and experience with word processing equipment. Department of Energy and Environment.

1132. CLERICAL POSITIONS (2) - Requires excellent typing and clerical skills. Will act as "floater" in department functioning at various levels of responsibilities and activities. Word processing experience is desirable. Department of Energy and Environment.

1133. EXPERIMENTAL MACHINIST - Experience all-round machinist for non-production work in research and development shop. Project assignments from raw material to final assembly, with demonstrated ability and imagination in all phases of machine shop work. Experience in job print interpretation, layout and machine set up required. Central Shops Division.

Autos and Auto Supplies

4 RIMS - 5 hole, for 14" tire, orig equipment from 73 Buick. $10 ea. Ernie, Ext. 4291.

71 DUSTER - 3 spd std shift, rebuilt eng & trans, excel body, very clean. $950. Ext. 3501, 924-3303.

75 HONDA CB-200T - low mi, garaged, fairing-windshield, crash bars, sissy bar, excel cond. 473-7667.

74 VW DASHER - 98,000 mi, good cond. $2000. Marj, Ext. 3396.

74 DATSUN B-210 - hatchback, 4 spd, brown, 81,000 mi, excel running cond, snows, new front tires. $1100. Charlie, Ext. 4351.

72 DODGE DART - green, 4 dr, 6 cyl, 109,000 mi, new batt, good cond. $750. Bob, 744-5871.

2 HONDA EXPRESS MOPEDS - used 2 mos, new over $400. Both/$700. 751-8080 after 5.

73 HORNET SPORTABOUT - high mi, good running cond, a/c, a/t, good tires, reg gas. $750. 286-8517 after 5:30.

77 CHEVY BLAZER - low mi, 2 sets of tires, orig owner. $5500. 928-6944.

74 AUDI FOX - 50,000 mi, reg gas, good cond, $2400 snows, 2 ea H78x14, E78x14, A78x13. Steve, Ext. 4068

73 OLDS CUTLASS - ps/pb, a/c, AM/FM cassette, snow, excel in/out. $1700. Ken, 924-3756.

FRONT END PARTS - for TR2,3,4, compl susp, $75; also rear end, $50; VW body parts, doors, hood, $25 ea. Augie, Ext. 4220.

TIRES - (2) Firestone Town & Country snows, used 2 winters, for a Datsun, A78-13. $24. Ext. 4046.

RIMS - (2) 15" 5-hole, w/tires, for Ford van or pickup. $15 ea. Dick, Ext. 3273.

72 TOYOTA CORONA - 4 dr, man shift, good cond, good mi. Ext. 3036.

65 FORD GALAXIE - very good running cond, asking $350 or best offer; (2) 78-15 snows, practically new, $40/pr. Noreen, Ext. 2815, 727-9016.

74 VEGA - dependable transp, good mpg, snows, AM/FM stereo 8-trk. Cumming, Ext. 4343/4347.

74 CHEVY IMPALA - a/c, a/t, white, 2 dr. $1750. J. Soler, 681-5740.

75 CHEVY VEGA - a/t, 35,000 mi, 22 mpg, int/ext excel, 4 new tires. $1600. Ext. 7608, 363-2732.

73 COUGAR - a/c, ps/pb, 351 ci, 8 cyl. $1950. 286-8356.

73 INTERNATIONAL PICKUP - low mi, w/cap, 4 spd, p/s, step bumper. $2300. 727-2971 after 5.

78 FORD VAN - 351-V8, 4 spd overdrive, h.d. susp & electronics, AM/FM stereo, carpeting. Daryl, Ext. 7696, 744-7247.

68 CHRYSLER NEWPORT - ps/pb, a/c. Best offer. Ext. 7717.

70 CHEVELLE - 2 dr, 4 spd, mags, tape deck, new tune-up, runs great. $825. Ext. 7979, 261-5030.

69 LINCOLN CONTINENTAL - 4 dr, good cond. $900. 585-9816.

75 CHEVY C10 PICKUP - ½ ton, a/t, R/h, CB, new tires, cap, clean. $3500. 475-3150.

CHEVY ENG - 71-350 ci, excel for rebuilding, many new parts. Asking $150. Lou, Ext. 4046.

69 NOVA - p/s, a/t, a/c, 6 cyl, good tires, new shocks, 22 mpg. Pete, Ext. 4574, 878-1225.

TIRES - (2) L60-14, Indy profile, Micky Thompson, super wide. $20. Vinnie, Ext. 3664.

CAR TOP CARRIER - $10; bumper racks to carry motorcycle, $15. Jeannie, 727-4242.

72 FORD GALAXIE - good running cond, needs painting & tires, only 75,000 mi. $200. Ext. 2616, 751-5868 eves.

72 FORD STA WGN - excel running cond, a/c, p/s. Asking $500. Ext. 3106/2861.

SNOW TIRES - Goodyear G78-14 on GM rims, $45/pr; (2) G78-14 on GM rims, $20/pr. Ext. 3376.

73 CADILLAC ELDORADO CONV - fully loaded, white/red int, good cond. $4000. 475-0068 after 5.

78 DODGE VAN - 6 cyl, a/t, p/s, custom inside, white, spare wheels, radials. $5500. Rick, Ext. 4437.

66 OLDS CUTLASS - ps/pb, a/c, new tires, good cond. $225. Mike, 281-6191.

72 PINTO STA WGN - 58,000, a/t, good cond. $1100. Murdock, Ext. 4731.

77 SUZUKI RM80 - dirt bike, DG pipe, S&W shocks, many access, excel cond. $475. 929-8725.

Boats & Marine Supplies

3 HP SEARS OUTBOARD - new rope starter & head gasket, runs well. Ernie, Ext. 4291.

ODAY MARINER - 19' sloop, 4 hp Evinrude, head, sail cover, winter cover, running lts, more. Test sail it. Asking $3800. 473-2473.

35 HP EVINRUDE LARK OB - 1960, in running cond, w/controls & pwr pak. $10. Don, Ext. 3511.

CARRIER & STAND - for outboard motor, med size. $15. R. Johnson, Ext. 3354.

30' C/CRAFT S/FISHERMAN - twin 327 FWC, Tuna tower, 2-station controls, UHF C/B, D/recorder. $4500. Eves 681-8819.

PENN YAN OUTBOARD - 40 hp Evinrude motor, trailer. Sacrifice, $250. 325-1499.

SEARS 3 HP OUTBOARD - very old, for parts. Take it away. 286-3509.

18' GARVEY - 115 hp Evinrude, excel cond. Bob, Ext. 3309, 289-1568 after 6.

BOAT GENERATOR - 7.5KW Onan 115/220 diesel, FWC new cond, never installed in boat. Walt, Ext. 3256, 286-0336.

Yard Sales

ROCKY POINT - 37 Brookhaven Drive, Oct 6-7. Walt, Ext. 3006, 821-9223.

MIDDLE ISLAND - Middle Island Blvd off Whiskey Rd Oct 6-7, 9-5. John, Ext. 3675, 924-3528.

BAYPORT - 298 Gillette Ave, Oct 6-7, 10-2. O. Medeck, 472-0339.

SHOREHAM - contents of house, Bradley Dr, off Randall, S/25A, follow signs, Oct 11-14. Ext. 3707.

Miscellaneous

BICYCLE - men's 10 spd, in decent cond. Asking $50. Terry, 281-0360.

STAMPS - Scott catalog 64, 1331a (block), more, foreign, USA. 929-8725.

FENCE SECTIONS - 6' or 5' wooden basket-weave. Ext. 2980.

FRIGIDAIRE REFRIG - 17 cu ft, $275; Maytag dishwasher, butcher block top, $200; Maytag washer, $200. Ext. 3784, 929-8913.

22" MOWER - 3 hp, $15; Snapper 21"-3hp w/bag, $80. 331-2779.

BEDRM SET - contemporary, $1600 new, only 2 yrs old, excel cond. Joe, Ext. 4139.

VACUUM - Hoover canister, $10; umbrella stroller, $3; Saladmaster-all stainless, slices, grates, etc. $10; alum screens. Ext. 3521.

MUSIC BOOKS - fake books, brand new, over 1000 songs. $25 value for $10. Dick, Ext. 3273.

TORO SNOW BLOWER - & mower combo, very good cond. $160. Joe, Ext. 4069.

BLUE SLATE - ½" thick square cut in matching sizes, 115 sq ft, $150; Sears console sewing machine, model 148.17,060, 5-stitch, zig-zag, new cond, $85. Hank, Ext. 3284, 727-7515 eves.

CAR TOP CARRIER - $10; mod coffee table, $10; folding stroller, $5. Paul, Ext. 4474.

POLAROID 360 - uses 108 film, w/elec flash & charging base, close-up kit, case for entire equip. Sacrifice, $50. Ext. 3254.

POOL COVER - woven blk plastic, 24 ft round, very good cond, $15; basketball hoop, backboard, never installed, $15. Fran, Ext. 3379, 589-3485 weekends.

ELEC HOT WATER HEATER - Rheem 80 gal glass lines. $65. 234-6220.

FURNITURE - green colonial sofa, good cond, gold colonial chair – somewhat worn, both/$100; oriental design rug, $25. Richard, Ext. 4396, 325-8158.

HALF-FARE COUPONS - (2) UA. $30; vacuum cleaner, $15; baby stroller & carriage combo, $20; high chair, $3. Ext. 2054, 698-0013 after 6:30.

PORTABLE DRYER - Sears Kenmore 110-120v, brand new, gold. $150. Ext. 7608, 363-2732 after 4.

PINBALL - Gottlieb Sinbad, 1+ yr old, all electronic. Cost new $1500, asking $1200. Dick, Ext. 4313.

CARRIAGE/STROLLER - Perego, $45; antique dresser, $55; color photo dryer, $25. 924-3303.

MINI BIKE - 2½ hp Briggs & Stratton, many new parts, great brakes, excel running cond. Asking $125. 744-5069.

BROWN LEATHER JACKET - like new, size 10; grey winter coat, size 10, new. Chris, Ext. 2907.

SPEEDWAY MINICYCLE - 14" spoke rims, drum brakes, lights, good cond, moved up to motorcycle. $150. Jim, 281-8957.

WOOD - teak, rosewood, mahog, ash, various lengths & sizes. Reasonable. 751-2867.

HEADBOARD - queen size, Mediterranean, good cond, $15; playpen, $10; deep fryer, $2; Schick men's hair dryer, $10; kitchen set, 42" round pedestal table, white formica top, 4 vinyl chairs (harvest gold), $100. Sue, 751-5829.

FRANKLIN STOVE - used 1 season. $125. 698-3092 eves.

FUEL OIL TANK - 275 gal, good cond. $75. 928-5031 after 6.

FOOD PROCESSOR - La Machine Model 354, used once. Bob P., Ext. 3784.

BEDRM SET - 4 pcs, good. Make offer. Cathy, 281-8111.

2-TWIN BOX SPRINGS - & steel hollywood frame, casters, excel cond. $20 ea unit. 744-8015 after 4.

FIR, SPRUCE TREES - you dig, 2/$7; GE elec range, 30", harvest gold, excel, $85. 727-1617.

REFRIG - 5 cu ft, excel cond. $100. Cora, Ext. 3908.

LIONEL ZW TRANSFORMER - for train buff, $50; Childcraft kitchen set, oven, refrig, sink, wood, excel cond, $120; cast iron fire dogs, massive, $150. Ext. 3420.

COUCH - & matching love seat. $175. 654-0810.

CAR COAT - men's corduroy med, quilted lining, Macy's best, never worn. Orig $75, now $35. 751-2867.

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

ROCKY POINT - Tides ranch, 3 bedrms, L/R, D/R, den w/fp, fin bsmt, gar, ⅓ acre, prvt beach, near shopping center, bank & school, many extras, $41,000. Ext. 3911, 821-1810.

BELLPORT - house w/pool, fp, 2-car gar, 4-5 bedrms, 3 baths, corner treed lot. $68,900. Ext. 4779, 286-3672 eves.

SOUTH SETAUKET - 5 bedrms, 3 baths, fam rm type kit, 2-car gar, w/w, a/c, gas heat, prof landscaping, 3-Village School Dist. $49,000. Ext. 4207, 698-1785.

YAPHANK - by appointment, 4 bedrm cape, unwooded ½ acre, full bsmt, 4 appl, greenhouse & storage barn, economical OHW heat, immac, minutes to BNL, $1050 taxes. $36,000. 924-5578.

MASTIC BEACH - 3 bedrm expandable ranch, Franklin stove, patio, country kit, 1% Farmers Home. Low 30's. Dennis, Ext. 4068, 281-6696.

ROCKY POINT - The Tides, ranch on treed ½ acre, newly reinsulated, 3 bedrms, L/R, D/R, den w/fp, eik, oak floors, pine fin full bsmt, gar, patio, prvt beach, assumable 8½% mtg. $45,900. 821-9072.

NORTH BRENTWOOD - 7 rm colonial, 3 bedrms, 1½ baths, L/R, D/R, fam rm, ex lg kit, full bsmt, gar, 100'x100'. $38,000. John, Ext. 3354.

CALVERTON - mother/daughter 3 bedrm ranch, oil fired heat & water, s/s, fin bsmt, assumable mtg 7½%, 1 acre prop. $33,000. Ext. 2022, 727-9058.

MT. SINAI NORTH - 3 bedrm, 2 bath cedar shake ranch, full bsmt, gar, s/s, gas h/w heat, secluded on ½ acre w/lots of trees, must be seen. $49,500. 473-7030.

EAST ISLIP - lg colonial, 5 bedrms, perf 2-fam, prvt treed corner, ⅓ acre, eik D/R, den, L/R, 2½ baths, fp, gunite pool, 2-car gar, extras. $54,000. Ext. 2625, 581-3913.

SHOREHAM - 4 bedrm colonial, full bsmt, 2-car gar, 1 fenced acre. $56,500. Ext. 3040, 744-2821.

MASTIC BEACH - young sprawling ranch, 3 bedrms, 2 baths, L/R, D/R, eik, lg fam rm w/fp, bsmt, 2-car gar, ½ acre, fenced. $45,000. Ext. 4111, 281-1773.

For Rent

E. PATCHOGUE - 2 bedrm apt, kit, L/R, prvt ent. $270/mo (heat & HW incl). Walt, Ext. 2907-2913, 698-0576.

ROCKY POINT - 3 bedrms, 2 baths, .44 acre wooded, 1½ car gar, full bsmt, 4 appl. 400 + util. Walt, Ext. 3006, 821-9223.

SOUTHOLD - waterfront ranch, furn, 3 bedrms, 3 baths, fp, L/R, D/R, washer-dryer, deep water, boat docking. $500/mo + util. Ext. 3417, 765-2226, 5-9 p.m.

BELLPORT - bayview, 3-4 bedrms, 2 L/R's butler's pantry, deck, 15 mos beginning Jan 1, 1980. Ext. 3364, 286-0669 eves.

YAPHANK - German Gardens, sm bungalow for single, avail immed. $190 incl elec. Ext. 2495, 924-3946.

YAPHANK - 1 bedrm cottage, suitable for 1, approx 5 mi from Lab, gentlemen preferred. $175/mo. H. Powers, Ext. 3379, 924-3863 bet 4-5 p.m.

BLUE POINT - 5 rm, 2 bedrm house near water. $385/mo incl util, mo sec. Ext. 2982, 363-6845 after 6.

Wanted

AUTO-RELATED LITERATURE - repair owner's manuals bought & sold. Frank, Ext. 2022, 281-3460.

SHOTGUN - 12 gauge, used, cheap; remote control airplane & servos. Chuck, Ext. 2350, 821-1525.

HOUSEMATE - for lg 4 bedrm, 3 bath house in Coram. $165 + share util. Ext. 2521, 928-8379.

BASEBALL CARDS - all years. Dave, Ext. 7500, 924-6575.

BABYSITTER - Holbrook, for 1 & 3 yr old, 8:00 a.m.-5:30 p.m., prefer my home, reliable, references. Bette, 589-8331.

RESPONSIBLE BABYSITTER - prefer on-site or 3-Village area, will care for 2 yr old boy, nice & toilet trained, full time. Heidi, Ext. 7591, 689-8548.

GOOD HOME - for German Shepherd female, spayed, gentle, obedient, likes children. Ext. 2332, 475-2629.

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

OUTBOARD MOTOR - late model Johnson/Evinrude, elec start, 40 or 55 hp. Ext. 3352/3358.

OLD NEWSPAPERS - used, unwanted, for 4th grade school project. Peggy, Ext. 3173.

RIDE NEEDED - between BNL & Queens (Rego Park), Tu/W/F. Dilip, (212)271-5725 eves.

68 VW BUG - excel cond, for 6 cyl pickup of same value. Gene, Ext. 7947.

SHARE HOME - mature working woman would like to share her home with same, 5 min from Lab. YA4-6101 before 3.

OLD DOLLS - porcelain & Bisque, & old teddy bears. 475-4199.

PERSONS - to go on 2-day shopping spree, Dec 1 to Reading, Pa, Dec 2 to Flemington, NJ. For info call Bea, Ext. 3592.

TONKA TRUCKS - used, most any cond, reasonable price. Bill, Ext. 2378, 286-0243.

APT TO RENT - to professional couple, no pets, no children, preferably Wading River area. Ext. 4483, 744-2644 after 5:30.

Car Pools

CORAM - La Bonne Vie Apts, car pool with us, BNL hours 8:30-5:00. Dennis, Ext. 4259; Alan, Ext. 4367.

MASSAPEQUA - person to join already formed car pool. Al, Ext. 4216; Gene, Ext. 3519.

Lost & Found

FOUND - key w/blue numbers, vicinity tennis courts. Ext. 4301.

Services

UPHOLSTERY - Sm chairs, cushions, slipcovers, etc, your fabric. Free estimate after 5:30. Irene, 924-9288.

DRIVERS - save gas. If you drive an automatic and wish to learn stick shift, call for info: 698-1362 after 5:30.

TYPING - thesis, papers & technical manuscripts. 281-1773.

HOUSE SITTING - couple available for house sitting Dec thru March, references. Jim, Ext. 2968.

FIREWOOD - split, seasoned oak, 4'x16'x18'. $110 delivered. 924-4284 after 5:30.

BABYSITTING - mother will babysit in my home part time or full time, Coram area. Phyllis, 698-1702.

AUTO REFINISHING - all areas of work performed, discount rates for sm car refinishing. Ext. 2546, 744-4047.

MOVING, PICKUPS & DELIVERIES - free estimates. Ext. 3156.

CHILD CARE - my home near Lab (Ridge), weekdays, loving care by experienced woman. Sandy, 924-0425.

EXPERT TUTORING - by certified teacher in my home, all elem subjects, HS math, French, German. $10/hr. 941-4328.

Ads left out of this issue due to lack of space need not be re-submitted to appear in next week's issue. Please note that ads may not be more than 15 words long and must be received in the Bulletin office by noon, Monday, for publication on Friday.

To accommodate as many employees as possible, only one ad per person, per week, will be accepted.