BROOKHAVEN BULLETIN
Vol. 37 - No. 24 June 17, 1983
BROOKHAVEN NATIONAL LABORATORY

Opening a PANdora's Box

It was discovered in Los Angeles in the mid-1950s. The signs were mottled brown spots on the tops of leaves.

At first, researchers at the University of California, Riverside, dubbed it "compound X," because they couldn't identify it. Riverside used to be an agricultural experiment station, and it had a history of studying air pollutants that were suspected of causing crop damage.

By the time Jeff Gaffney went to Riverside as a graduate student 15 years later, compound X had been identified as PAN (short for peroxyacetyl nitrate, an organic compound). One summer, recalls Gaffney, "I could harvest only one crop of snow peas. That triggered my interest in PAN."

He did some work on it as a student, and now ten years later at BNL, as a chemist in the Division of Environmental Chemistry, DAS, Gaffney is again studying PAN.

PAN is toxic to plants at parts per billion levels. "As a cause of crop damage, PAN looks just as bad as ozone, maybe worse," says Gaffney, "but scientists have focused on ozone because it's much easier to measure. PAN is difficult to work with. It's explosive, unstable, and there was no easy method to synthesize high purity PAN in the lab."

What makes the lab studies possible is that Gaffney came up with a simple method to synthesize PAN, based on one developed by a Danish scientist. Gaffney's method yields large amounts of high purity gas phase PAN.

For the past year and a half, Gaffney and others in his division, including Gunnar Senum, Yin-Nan Lee and Ruby Fajer, have been collaborating on these basic studies of PAN, which must be done before researchers can begin to assess its impact on the environment and on human health.

In nature, PAN is a secondary product of photochemical smog, the haze that everyone associates with Los Angeles but which actually is a global phenomenon. At Brookhaven, using Gaffney's method, Ruby Fajer synthesizes PAN by reacting nitric acid with peracetic acid in the presence of concentrated sulfuric acid. PAN is extracted from the mixture using a heavy oil. Frozen, the PAN/oil mixture can be stored for months with little decomposition. When gaseous PAN is needed, the solution is thawed and the more volatile PAN is separated from the oil.

With high purity gaseous PAN readily available, the BNL team does lab studies to determine what happens to PAN in the atmosphere.

Gunnar Senum uses a technique called FTIR spectroscopy to study decomposition kinetics of the compound. Left to itself, PAN has a half life of 110 hours at room temperature; in other words, 50 percent of it is gone in four days. At cold temperatures, decomposition takes longer.

PAN has two pathways of chemical decomposition. One leads to methyl nitrate, which has just begun to be studied, and carbon dioxide, which is not considered harmful.

PAN can also decompose into a peroxyacetyl radical and nitrogen dioxide (NO_2). Gaffney and Senum have measured this decomposition rate and found it to be twice as slow as what other scientists had reported in the past. This means PAN lasts much longer in the atmosphere than previously supposed.

How long does it last? The BNL researchers don't know yet. But on the way to answering that question, they are also investigating if PAN is removed by clouds and aerosols — more specifically, what role does PAN play in the acid rain story?

Says Gaffney, "People worry about NO_2, because it is a precursor of acids and nitrates found in acid rain. Yet PAN is more soluble in water than NO_2."

In fact, a study being done by Yin-Nan Lee shows that PAN is almost a thousand times more soluble than NO_2. He also found that aqueous oxidation of sulfur dioxide (SO_2) by PAN forms sulfuric acid at a rate which may make PAN important in acid rain chemistry.

According to Gaffney, all these lab experiments are preliminary to doing field studies. "Based on what we learn in the lab, we will know if we are measuring the right things in the field," he says. Already planned for later this summer are field experiments in Oak Ridge, Tennessee.

As Gaffney says, "The work on PAN is just beginning. Once we understand the mechanism of these reactions, then we can better evaluate how PAN affects the environment."

—Mona S. Rowe

Doug Humphrey

From left, Jeff Gaffney, Ruby Fajer, Gunnar Senum and Yin-Nan Lee in lab where PAN is studied with FTIR spectroscopy.

ANS Honors Hendrie and Kouts

Joseph M. Hendrie, BNL Senior Scientist, and former chairman of the U.S. Nuclear Regulatory Commission, was elected Vice President and President-Elect of the American Nuclear Society at its annual meeting this week.

He assumed the office of Vice President yesterday, and will serve a one-year term in that office. In June 1984 he will automatically become President of the Society.

Hendrie is a member of the National Academy of Engineering and a fellow of the American Society of Mechanical Engineers and the American Nuclear Society. He received the E.O. Lawrence Award of the U.S. Atomic Energy Commission in 1970. Last year he was made a Commander of the Order of Leopold II by King Baudouin, King of the Belgians.

Herbert Kouts, chairman of the Department of Nuclear Energy, was also honored at the ANS meeting. He received the Nuclear Reactor Safety Division's Tommy Thompson Award, which was established to recognize outstanding professional contributions in the area of nuclear reactor safety. It carries with it $750 and a citation. The citation reads, in part:

"For over twenty five years your advice and managerial leadership have provided wisdom and purposeful direction to key elements of the nation's nuclear safety program. During this time you served to focus and define safety issues as a member of the Advisory Committee on Reactor Safeguards and as its Chairman; you accomplished the furthering of major safety research efforts at our national laboratories while serving as Director, Division of Reactor Safety Research of the United States Atomic Energy Commission and as Chairman, Department of Nuclear Energy at Brookhaven National Laboratory; and you were a major contributor to improved safeguards of nuclear materials as Head, International Safeguards Project Office. This award is presented in recognition of the dedication and leadership inherent in such outstanding accomplishments."

Mort Rosen

The Basic Energy Sciences Laboratory Program Panel meets every six months at a different laboratory to discuss relevant programmatic and policy issues. The Panel met at Brookhaven on June 9 and 10 and the meeting was hosted by Martin Blume, Associate Director, (left). With him are Donald Stevens, Deputy Associate Director of Energy Research for Basic Energy Sciences (DOE); Michael Wilkinson, Director, Solid State Div., Oak Ridge National Laboratory; and Richard Kropschot, Associate Director of Energy Research for Basic Energy Sciences (DOE).

Transvan Goes Into Second Gear

Four years ago, a pilot vanpooling program, called Transvan, went into operation at Brookhaven. It has been successful and, as many passengers say, "we've never had it so good." So, Associated Universities, Inc. (AUI), which financed the first program, is going to expand it. AUI has approved the purchase of five new 12-passenger vans, and the eventual replacement of three vans now in use.

The areas selected to be served by the new vans are Nassau County, North Fork, South Fork, Huntington, and Bay Shore/Babylon. Experience has shown that the longer runs are the energy saving runs, and energy saving is what this program is all about. In addition, people who commute long distances, definitely save money by vanpooling.

Passenger fares for the selected areas have yet to be figured out, but, as an indicator, the following amounts are currently being charged for the three vans in operation:

Patchogue	$31 per month
Queens	$70 " "
Stony Brook	$36 " "

Passengers pay their monthly fares in advance and there is no refund if they don't take the van every day.

Marge Stoeckel (Fiscal) has been vanpooling since the BNL program started and she says that it is much cheaper than driving her own car; she is always on time; it is convenient; and the vanpoolers have developed a good camaraderie. She credits the driver, Jack Barry (Plant Eng.), as an excellent driver with a well organized schedule.

Merrith Knight (Plant Engineering) has been driving the Queens run for the past two years and he thinks the program works very well. When he says "nobody would ever want to go back to driving his own car" he is speaking for everyone on his run.

According to Barney McAlary, Vanpool Coordinator, the Queens van gets the greatest use, so it will probably have to be replaced first, but the other vans may be on the road for over five years. The three vans have been depreciated over an average five year life. "In the event the life is greater than five years, those passengers will really get a break on the fare," said McAlary.

Don Jesaitis (Plant Eng.) financed the purchase of his own van through the AUI van program and brings 11 people to work each day from Miller Place, Sound Beach and Rocky Point. He says that "even when it's paid off, I will continue to operate it as a Transvan, because I come to work anyway, and what's the point of stopping in midstream?"

Paul Mohn (CBA) has been doing the driving from Stony Brook from the beginning. But now he only drives half time, and Sidney Heller (App. Math.) drives the rest of the time.

(Continued on page 2)

Roger R. Stoutenburgh

The annual National Synchrotron Light Source General Users Meeting was held June 6-7 at Berkner Hall. Over 200 participants from universities, industry, BNL and other government labs came to discuss their first experimental results and talk about plans for future plans for wiggler and undulator magnets which will significantly increase the photon energy and brightness. Gathered above are some of the users of the Light Source: (from left) Peter Bennett, Bell Labs, uv photoemission; John Sutherland, BNL/Biology, biological spectroscopy; Jerry Silverman, IBM, x-ray lithography; Roger Klaffky, BNL/NSLS chairman of meeting; Harvey Rarback, SUNY Stony Brook, x-ray microscopy; Michael White, BNL/Chemistry, gas phase spectroscopy; Gwyn Williams, BNL/NSLS, uv photoemission; and David Wesner, BNL/Physics, uv photoemission.

Employment Gains For Scientists, Engineers

Employment of scientists, engineers and technicians in manufacturing industries grew between 1977 and 1980 more than six times as fast as that of the overall work force — six percent per year compared with one percent — a National Science Foundation (NSF) study has disclosed.

Manufacturing employment in the three occupations grew to 1,345,000 with each of the three categories growing by 20 percent over the 1977-80 period. Most of this growth was generated by high-technology industries — electrical and non-electrical machinery, transportation equipment, chemicals and instruments, according to the report.

Among scientists, engineers and technicians, the employment of industrial engineers grew most rapidly — almost 25 percent. The report also showed rapid growth in employment of computer systems analysts and programmers. Employment of the former grew by 10 percent per year, while the latter grew by 13 percent per year between 1977 and 1980.

Employment of scientists in manufacturing industries was 145,000 in 1980, with the largest occupations — chemists and computer analysts — accounting for more than three quarters of these jobs. Jobs for chemists, the largest science occupation, increased only slightly from 1977 to 1980. Thus, by 1980, computer systems analysts were about to surpass chemists in employment. Employment in life and other physical science occupations increased moderately during this time. The mathematical sciences showed the only employment declines.

Public Sale — Motor Vehicles

Fifty-two vehicles, located at warehouse T-87, are available for public sale. This will be an informal competitive bidding and bid forms may be obtained at buildings 87 and 211 on June 27.

Inspection will be permitted from June 27 through July 1, during the hours of 9 a.m. to 4 p.m.

Bids will be opened on July 12 at General Services Administration Business Service Center, Bid Room, 26 Federal Plaza, New York City.

For further information call extension 2302 or 2977.

Emergency Backup

2222 — that's the emergency phone number you would use if you needed to summon the Laboratory's police and/or fire and rescue groups as quickly as possible. It is hoped you'll never have to use that number, but it's good to be prepared for any eventuality.

And speaking of any eventuality, it's conceivable that the same set of circumstances that makes you dial 2222 could also put your telephones temporarily out of order. What do you do then? In that situation, or in any emergency when the phones are not available, the correct action is to pull the handle on the nearest red box connected to the Lab's main fire alarm system.

Summer Lectures

The first in a series of summer lectures for students, "An Introduction to Elementary Particles," will be given at 10 a.m., Monday, June 20, in the Small Seminar Room, Physics Department. The lectures will be presented at an introductory level by Physics Department staff and are intended for undergraduate summer students, but Laboratory personnel and visitors are also welcome. Included in the program will be several tours of high energy facilities and experiments. For information, call Bill Morse, Ext. 3859, or Bill Marciano, Ext. 3151.

Arrivals & Departures

Arrivals

Luis Aguilar ..... Accelerator

Departures

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

Stephen M. Bart ..... Physics
Anita Egley ..... App. Math
Christina D. Freund ..... App. Science
Samuel V. Panno ..... Nuclear Energy

Micom Meeting

The next meeting of the MICOM Users' Group will be Tuesday, June 21, at 3 p.m. in Conference Room 2-160, Bldg. 510A (Physics). Ruth Stannish, MICOM representative, will explain forms, headers and footers, and pagination. This will be the last users' meeting until September, so make every effort to attend. For further details, call Ellen Citrolo, Ext. 4486, or Nancy White, Ext. 3793.

Winner's Circle

Richard Skelton (Accel.) is the second employee to receive an award for a cost-saving suggestion. Skelton has been given a "down payment" of $100 for suggesting improvements in BNL's travel policy relating to hotel/motel accommodations.

It seems that many employees were making their own hotel reservations when going on Lab business and were not making use of various discounts available to them as Lab employees. Travel policy now requires such reservations to be made through the BNL Travel Office.

In another year, Skelton's idea will be evaluated to see how much it has saved the Lab during a 12-month period, and the appropriate adjustment will be made in his cash award.

Reminders

Frederick Lipfert, DAS, will present the last Brookhaven Lecture of the season, on June 22 at 4:30 p.m. in Berkner Hall. His topic will be "Environmental Impact Assessment: Theories and Applications."

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Brookhaven Women in Science are hosting a cocktail party on June 21, beginning at 5 p.m. on the patio of the Brookhaven Center. To reserve a place, send your check for $3.50, payable to Brookhaven Women in Science, to Ellen Gannon, Bldg. 801. Cash bar. Everyone welcome.

CREF Values

March	$44.48	April	$46.32
May	44.53	June	43.34
July	42.41	August	47.05
September	47.32	October	52.59
November	54.78	December	55.73
January	57.59	February	58.93
March	$60.75	April	$65.12

May $65.07

Your Loss Is Someone's Gain

20-24 cups
10-12 pints
5-6 quarts

No matter how it's stated, the average adult has plenty of blood. In fact, the normal, healthy person has enough blood to easily give a pint away as often as five times a year. Within 24 hours of each donation, the donor's blood supply is back to normal and nothing has changed, *except* that another pint of life-saving blood is available for transfusion to accident victims, surgical patients, hemophiliacs and others with a need for this precious liquid.

But blood supplies do not last forever. They are used up or perish and must be replenished. You can help do so next week at BNL's 1983 Summer Blood Drive. The Greater New York Blood Program will be in the gymnasium Wednesday and Thursday, June 22 & 23, from 10 a.m. to 3 p.m., to assure that an adequate supply of blood will be available in this area during the upcoming July 4th weekend, traditionally a bad one for accidents. Won't you call Elaine Zukowski, Ext. 3334, today, and make a pledge to give the gift of life?

A Great Adventure

A special trip to Great Adventure Amusement Park and Safari in New Jersey has been arranged for BNL employees, visitors, and their families on Saturday, August 6. A discount price of $25 per person will include admission to all activities at the Park and Safari, bus transportation, and snacks and soft beverages on the bus.

Space on the trip is limited to 96 people, on a first come, first served basis. Reserve your place on the bus by getting your payment to Renee Flack, Bldg. 460, by July 15.

Transvan (Cont'd)

They both pay half fare. Mohn prefers this arrangement, but he still maintains the van, keeps the records and collects the fares. He says the van failed to run only one day in four years and that was because of an ignition problem.

Now it is time for the selection of drivers for the five new vans. They will be responsible for organizing the vanpools, transporting passengers two and from work, for the maintenance of the vehicle, and record keeping. In return, they will ride free and have personal use of the van after work and on weekends. Drivers will be selected according to the following criteria:

The driver

has to live in the same vanpool area that he would drive for,

must have a good driving record,

have a good work attendance record,

must be recommended by supervisor,

must work regular hours with little overtime required, and

must be able to provide safe parking space at home for van.

Employees who live in the areas selected for the new vanpools and who are interested in being a Transvan passenger or a driver, should complete the coupon below, and return it to Fiscal Officer Barney McAlary, Bldg. 134A. Also, any questions can be directed to McAlary on Ext. 2494.

TRANSVAN Interest Survey

I am interested in becoming a member of a commuter van pool from Nassau County, North Fork, South Fork, Huntington, Bay Shore/Babylon.

I would like to be a

.....**Driver** .....**Passenger** .....**Either**

Name .....

Address.....**Town**.....

Nearest major cross street .....

Bldg. No.....**Office Ext**.....**Start work**.....**Leave**.....

Return to B. McAlary, Bldg. 134A

TRANSVAN

BROOKHAVEN BULLETIN

Published weekly
for the employees of
BROOKHAVEN NATIONAL LABORATORY

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In Appreciation

The loss of our house through fire put a sadness in our hearts, but the thoughtfulness and generosity of those at BNL have enriched our lives. We wish to thank everyone for their kindness and concern.

— The Frank Martin family

PSI News

The Upton Chapter of PSI will hold its first anniversary installation dinner on Monday, June 20, in Room B, Berkner Hall. A cash bar will open at 5 p.m. and dinner is at 6:15 p.m.

Speaker for the evening will be Mary Fallon, Deputy Commissioner of Consumer Affairs for Suffolk County.

Guests are welcome. To make reservations for dinner contact Pat Towey, Ext. 3445 before 5 p.m. today.

Golf

A total of 60 golfers played in each of the first two tournaments. The winners were:

Swan Lake — low gross for 18, J. Millener and G. Korhut (79); low net for 18, P. Mohn (68); low gross front 9, P. Bond (39); low gross back 9, R. Webster and T. Romano (39); low net front 9, R. Meier (32); low net back 9, A. Dick (32); long drive, T. Romano; and closest to the pin, R. Webster.

Riverhead — Callaway competition, B. Laws (71); low gross for 18 holes, D. Sweely (80); low gross front 9, R. Webster and G. Korhut (39); low gross back 9, J. Millener (42); long drive and closest to the pin, J. Usher.

Cafeteria Menu

Week Ending June 24, 1983

Monday, June 20		
Cream of potato leek	(cup)	.65
	(bowl)	.75
Western omelet & fries		1.80
Sweet & sour pork on rice		1.95
Hot Deli: Breaded chicken pattie club	(bread)	1.95
	(roll)	2.05
Tuesday, June 21		
Beef barley soup	(cup)	. 65
	(bowl)	.75
Tomato poached cod & 1 veg.		1.90
Braised beef w/veg. & rice pilaf		2.00
Hot Deli: Pastrami	(bread)	1.85
	(roll)	1.95
Wednesday, June 22		
Split pea soup	(cup)	.65
	(bowl)	.75
Ham and broccoli crepes & 1 veg.		1.85
Shrimp cakes & 1 veg.		1.90
Hot Deli: Italian-style meatball hero		1.95
Thursday, June 23		
Cream of chicken soup	(cup)	.65
	(bowl)	.75
Western-style chili on rice		1.85
Barbeque spare ribs w/black-eyed peas		1.95
Hot Deli: Top round of beef	(bread)	1.95
	(roll)	2.05
Friday, June 24		
Fish chowder	(cup)	.65
	(bowl)	.75
Old fashioned beef stew on egg noodles		1.95
Italian-style chop suey & 1 veg.		1.90
Hot Deli: Breaded fish fillet hero		1.95

Summer Party

The BNL Hospitality Committee invites all women employees, or wives of employees, guests and visitors, to get together and get acquainted at the Summer Tea and Sherry Party slated for Thursday, June 23, from 3:30—5:30 p.m. in the North Room of the Brookhaven Center.

Since meeting and greeting other women who are at the Lab this summer is the main purpose of the party, there is no formal theme. However, fresh plants and flowers will be displayed, the art of Japanese flower arranging will be demonstrated, and tea, coffee and sherry will be served, along with an assortment of home-made breads, fresh vegetables and dips.

During the party, babysitting will be provided free of charge at the Recreation Bldg. For very young children, please bring a car bed or playpen. Also bring one or two toys for each child to play with and put the child's name on each toy.

Aviation Club

The Aviation Club welcomes associate members. For an annual dues of $3, an associate member may participate in all club outings, sharing flight costs with other participating members. No knowledge of aviation is needed, just an interest in flying.

Full members are assessed $5 a year, and are entitled to borrow club-owned equipment.

The club is planning a flight on Sunday, July 24, to Old Rhinebeck Aerodrome. Future trips are planned to Block Island and Martha's Vineyard, as well as a fly-in barbecue. For more information, contact Lou Addessi, Ext. 4758; Len Chimienti, Ext. 4675; Ron Dobert, Ext. 7696; or Audrey Karzenski, Ext. 3962.

Softball

Scores for Week of June 6

League I

Blue Jays 32 - Big Sticks 12

Big Sticks started out the game with back-to-back homers by Al Borelli and Bob Foley. The Blue Jays came storming back with 12 runs in the 1st and 14 in the 2nd. For the Big Sticks, Walt Bay, Tim Costanzo and Vin Letteri were 3 for 4; Bob Foley was 3 for 5 (2 home runs). For the Blue Jays, G. Oldham was 6 for 6; Frank Palmeri was 5 for 6; Larry Musso was 5 for 5; Nick Pisco and Dennis Hall were 4 for 6 (Dennis also had a home run and 10 RBI's); Luis Nieves had a home run.

Ice Pops -13 - AMD 12

Tirre Farmer was 4 for 5.

Phoubars 22 - Six Pax 13

Guy Mastrion had 2 triples for the Phoubars.

Ravens 20 - Moles 7

For the Ravens, Herbie Harris was 3 for 4 with 2 home runs; Bob Brown was 3 for 4 with 2 triples; Walt Mason and Leon Lawrence also were 3 for 4.

League II

Magnuts 30 - Light Source 0

Roga 19 - Dirty Sox 2

Home runs by Lou Cannizzo and Joel Scott.

Lights Out 13 - Random Errors 8

Home runs by Walter Brech and John McCuffery.

Medical 8 - Titans 5

League III

Nads 9 - Mole-Esters 6

TNT 13 - No Names 9

E-Z Riders 7 - Survivors 5

League IV

Spacekadets 13 - Who's On First 9

Denise Meisell and Jim Vogel played outstanding defense. Good hitting by the women.

Turkeys 24 - Underalls 5

The Source 17 - Random Sample 8

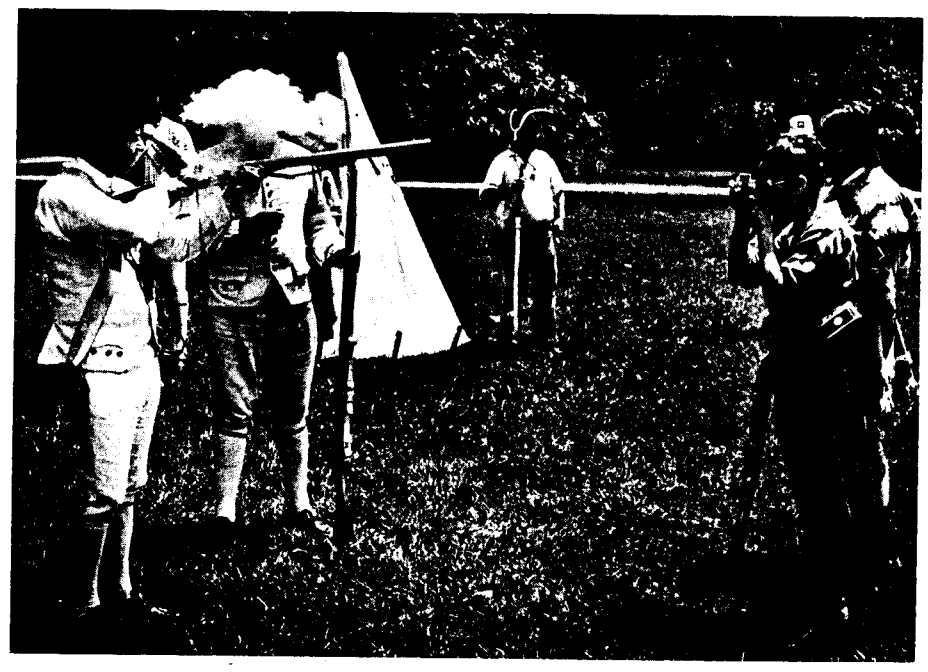
Who Cares 24 - No Feedback 5

Septembers 16 - Mudville Sluggers 15

Attention players: To maintain the quality of the infields, please keep off the infield areas at all times other than official infield practice/game time. Use the outfield grass instead.

Over 4,100 people came to Brookhaven last Sunday to enjoy a special festival, one of the official events commemorating Suffolk County's 300th anniversary. They watched local craftsmen at work, sampled international food specialties, delighted in the dancing and cheered the Huntington Militia. This first public tour of the season focused on the history of the Brookhaven site during World Wars I and II and on the Exhibit Center. Regular tours of the Laboratory are being given every Sunday until the end of September, except for holiday weekends, from 10 a.m. to 3 p.m.

—photos by Stoutenburgh



NYC Train Trip

The Hospitality Committee is planning a group railroad trip to New York City on Wednesday, June 29. Departure will be at 7:55 a.m. from the Patchogue LIRR station. Round-trip fare for adults is $3.50; children under five years ride free.

Reserve a ticket by sending your fare through the U.S. mail to BNL, P.O. Box 322, Upton, New York 11973. Please do not send cash. Checks or money orders, payable to BNL, must be received by Thursday, June 23. Put the date of the trip, your BNL life number and your phone number on the back of your check or money order. Tickets will be distributed at the railroad station on the day of the trip. Refunds will be made only if cancellations are rceived by the Monday morning preceding the trip.

Quilting Club

The BERA Quilting Club will meet on Tuesday, June 21, in the lobby of the Brookhaven Center from 9:30 to 11:30 a.m. Members will learn to make Suffolk Puffs to fill a Flower Basket block for one lucky participant. Please bring sewing tools and colorful fabric scraps. All are welcome, including children. For more information, call Bernie Benz, 928-1068.

Soccer

The Soccer Club plays pickup games on Mondays at 5:15 at the BERA field. Everyone is welcome to play. Anyone interested in playing on Fridays, too, should contact E. Abola at Ext. 4383.

Classified Advertisements

Placement Notices

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

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

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

For further information regarding a placement listing, contact the Personnel Placement Supervisor, Ext. 2882.

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

1894. CLERICAL POSITION - Requires record-keeping and inventory experience as well as heavy telephone contact background and typing skills. Knowledge of shop terminology and equipment desirable. Will be responsible for ordering tool crib supplies, keeping accurate up-dated inventory, and cataloguing of items. Central Shops Division.

1895. STAFF ENGINEER - Requires a bachelor's degree in mechanical engineering or equivalent capabilities. Will be involved in stress analysis testing, investigating heating problems and computer programming and analysis. National Synchrotron Light Source Department.

1896. PLUMBER A - (Temporary) - Requires successful completion of a four year apprenticeship program and/or substantial experience in the commercial/industial sector as a plumber. Will be responsible for the layout, construction, installation, repair and maintenance of water, sewage and gas systems, related facilities and auxiliary equipment. Plant Engineering Division.

Autos & Auto Supplies

73 BUICK CENTURY - Ext. 4534 or 924-7916.

71 FORD LTD - $450; 1976 transmission for Duster Dart, $50. Glenn, 732-3350.

75 FORD TORINO - $900. Zvi, Ext. 3187/4407 or 3936.

CLASS II TRAILER HITCH - for Dodge van, $50. Harry, Ext. 2923.

MINI BIKE - $150. Chris, 585-4038.

72 HONDA 350 - $1,100. 744-7885 eves.

TREK SLIDE-ON CAMPER - 878-0516 after 6 p.m.

77 DODGE - $4,200. 588-4703.

79 HONDA SUPER SPORT MOTORCYCLE - 750F, $1,900. 473-7809.

75 PLYMOUTH VALIANT - $1,200. Rich, Ext. 4134.

76 GRAND PRIX - $2,850. 481-6426.

78 PLYMOUTH VOLARE WAGON - asking $2,700. Cheryll, Ext. 4207 or 654-2041 eves.

57 CHEVY WAGON - $800. 588-9459.

TIRES & RIMS - 15x10 white, 15x8 alum. slots, 1200 Flot-Tracs; 6' snow plow, best offer on all. 281-7230.

68 LINCOLN CONTINENTAL - $400. 472-1290 or 472-4871.

76 PACER - $1,100. 475-2679 eves.

66 VW SQUAREBACK - $500 or best offer. Rolf, Ext. 4238 or 286-2045.

73 TOYOTA PICKUP - $1,000. John, Ext. 2172 or 744-4386.

72 PLYMOUTH DUSTER - $650. Rick, Ext. 4100 or 727-7626.

VW PARTS - brand new, call for needs. Augie, Ext. 2419 or 289-4211 eves.

72 HONDA MOTORCYLE FRAME - 750 cc, many extra parts. 654-2076 eves.

72 BRONCO - $1,400. Don, Ext. 3511.

72 DODGE DART - Neil, Ext. 2023 or 422-1038.

78 DATSUN 280Z - $5,000 or best offer. 265-1475.

69 GMC PICKUP - w/cap, $1,000. 878-4864.

78 MUSTANG - Kathy, Ext. 3604 or 727-2846.

25' AVION TRAILER - $5,500. 878-4864.

77 GRANADA - Clarice, 325-0968.

74 MAVERICK - Ext. 7738 or 3015.

78 HONDA MOTORCYCLE - $1,700. 289-1122 after 6 p.m.

77 VW RABBIT - $1,800. Chan, Ext. 3131 or 731-6581 weekends.

76 CAMARO - $2,000. 286-1378 or 286-8041.

51 PLYMOUTH CRANBROOK - $2,500. 281-0110.

78 DATSUN 280Z - Lisa, 265-1475.

80 PONTIAC SUNBIRD - $2,800. Chan, Ext. 3131 or 731-6581 weekends.

78 PLYMOUTH FURY WAGON - Walt, Ext. 5316.

78 FORD PICKUP - w/cap, asking $3,500. 727-5079 after 6:30 p.m.

82 VW RABBIT - $5,800. Vera, Ext. 4444.

77 SAAB - Jim, 667-3909.

78 HARLEY DAVIDSON MOTORCYCLE - $3,900. 325-0928.

79 TURBO MUSTANG - $5,000. Ray Patuano, 666-0587.

67 PONTIAC VENTURA - $300 or best offer. Ext. 7187.

79 YAMAHA 650 - $1,700. Kathy, 929-6421.

75 CHEVY CAPRICE - Estate Wagon, $1,250. Fred, Ext. 3259 or 473-8622.

75 FORD LTD - $1,200. Ursula, 331-4596.

76 PINTO - station wagon, $1,800. Ursula, 331-4596.

76 FORD GRANADA - $1,600. 924-3281 early a.m. or late p.m.

75 HONDA CB400 MOTORCYCLE - $1,000. 798-4178 after 4 p.m.

68 VW SQUAREBACK - $150 or best offer. Tom, Ext. 3128 or 928-7344 eves.

TREK SLIDE ON CAMPER - 878-0516.

81 CHEVY MALIBU CLASSIC - $6,200. Ext. 5294.

77 OLDS CUTLASS - Lois, Ext. 2959 or 751-0023.

71 CHRYSLER - $750. Tom, Ext. 4084 or 878-1060.

67 DODGE DART - $230. Ed, Ext. 7786 or 744-7796.

70 DODGE VAN - $300; 72 Buick, $350; 73 Chevy Impala, $300. Lou, Ext. 4639 or 277-2671 after 6 p.m.

75 CHEVY CAMARO - 821-9280.

78 MONTE CARLO - asking $3,000. 821-9280.

DATSUN 260Z HUBCAPS - (6) 4/$40, 6/$55; black blazer top, $500. 744-3968 leave message.

68 CHEVELLE MALIBU - Bill, Ext. 4774 or 298-8657.

73 PONTIAC SAFARI WAGON - $800. 473-9379 between 6-7 p.m.

76 CHEVETTE SCOOTER - $1,100. Tony, 369-3068 or 744-9802.

Boats & Marine Supplies

61 CHRIS CRAFT CAVALIER - best offer. 654-2041.

20' OWENS - wood boat with cabin, good cond., $250. Ext. 2733 or 878-8491.

16' DORY - 1983, 18 HP Mercury, never used, Highland tilt away trailer, $2,250. 475-8696 after 6 p.m.

12' ALUMINUM BOAT - 6 HP motor, oars and equip., $425. 289-5134 after 5 p.m.

16' WOOD BOAT - w/trailer, 40 HP, 2 spare engines, all for $350. Sam, Ext. 2018 or 928-3568.

POWER PACK - for Evinrude, 115-125 HP, $100. Joe, 475-8440.

8' DINGHY - fiberglass, new, very strong, molded floatation, teak gunwales, flat floorboards, $400. Ext. 4745.

MARINE ENGINE PARTS - new, used, reconditioned, large inventory, Johnson, Evinrude, OMC, Sterndrive. 265-5218 eves.

JOHNSON OUTBOARD MOTOR - 2 HP, excel cond., will demonstrate, $185. 265-5218 eves.

14' FIBERGLASS SAILBOAT - British, main jib, 1.2 HP outboard, sound, needs paint, $500. Ext. 2027 or 360-4970.

Free

SPORTS ILLUSTRATED - 1964-1966. 751-3062.

NEEDLEWORK CLASSES - learn and have fun, 6/24/83, 12 noon, Bldg. 134, ladies lounge. 795-5551 after 6 p.m.

SOLAR ENERGY MAGAZINES - & technical papers, you pick up. Bill, Ext. 2378.

PORTABLE TV's - (4), working?? Ext. 2529.

Miscellaneous

PORTABLE DISHWASHER - $25; 15 cu. ft. chest freezer, good cond., $75. Walt, Ext. 5316.

JR. DINING ROOM SET - china closet, server, and 6 chairs, modern, ebony, $300. 588-6215 after 6 p.m.

HUFFY BIKES - (2), 3 spd., 26", coaster hand brakes, excel. cond., $90/ea. Ernie, Ext. 3354 or 475-7250.

PUPPIES - black Labrador Retrievers, 5 males, AKC registered, reasonable, 6 weeks old. 324-2242.

CAMERA - Minolta XG7, 50 mm 1.7 85-205 mm 3.8, 28 mm 2.8, 3x converter, auto 25 flash, case, perfect cond.; am/fm walkman-like radio, $15. Giovanni, Ext. 3406 or 3245.

GE AIR CONDITIONER - 14,000 BTU, operates on any outlet. Ext. 3392 or 475-8330.

ALUMINUM EXTENSION LADDER - 40', good cond., $70. George, Ext. 4476 or 744-4912.

ROLLEIFLEX TWIN LENS - Reflex, excel. cond. with case, $200. John, Ext. 5152 or 281-2471.

HOLIDAY SPA 'VIP' MEMBERSHIPS - (2), $29 per year, renewable $200 ea., both for $350. Harry, Ext. 2923.

GE FREEZER - 19.8 cu. ft., frostless, never used; Atari 400 computer, Basic cartridge, Pacman, Centipede, joysticks, all for $195 or best offer. Ext. 3060 or 744-9081.

COLOR TV - 19", $150; bicycles, 20", $20; hair dryer, $5; toaster, $5. Zvi, Ext. 3187 or 4407 or 3936.

SURF BOARDS - (1) 9'x3", Cal. custom popup, (1) 6', $10/ea. Harry, Ext. 2923.

DINING TABLE - oval, 58"x41", 12" leaf, good cond., asking $40. Ext. 7505 or 689-8605.

BOY'S BIKE - 26", balloon tire, Sears, good running cond., $10. 286-8814 after 5 p.m.

CAPTAIN'S BED - twin, dark pine, 2 drawers, 4 shelves, 3 yrs. old., $150. Nick, Ext. 7652 or 758-9197.

WOODEN DOUBLE DESK - seats 2; 4'x5' top, $80. Ray, Ext. 7509 or 924-0569.

CEILING TILES - used, white, insulating, 512 sq. ft. x 5/8 in. thick, $25. 473-7809.

LEATHER TRUNK - 36x11x21, $40. 751-3062.

POOL DECK - side mount ladder & seat at top, deck measures 3'x3' for 4' deep pool, $25; drapes, burnt orange, 120"Wx84"L w/traverse, white shear w/orange floral pattern curtains, 120"x84", both $50. Ext. 4456 or 281-0360.

WHITE POODLE - 3 yrs. old., adorable, excel. with children. 399-0864.

POOL TABLE - AMF Grand Prix, 9', slate top, automatic ball return, excel. cond., all access., $950. Ext. 2733 or 878-8491.

SOFA - good cond., blue, $30; ping pong table, $50. 929-4268.

PANASONIC CASSETTE RECORDER - model RQ-4095, built in mike and handle, excel. cond., $40; softball catcher's mask, $8; aluminum bat, $15. Ext. 3876 or 4822.

GUITAR AMP - (2) 12" speakers with foot pedal, excel. cond., $475 with guitar. Den, 289-0753.

WOMEN'S SHOES - never worn, 9 West, Suzanne Pony, 8-1/2 B, orig. $45, asking $15. Cheryll, Ext. 4207.

BASF CASSETTE TAPES - blank, Pro II CrO^{32}, C-90, $2.75/ea. Ext. 2521.

HAMS - Heath C.W. transceiver HW16, with V.F.O., ant., tuner, SWR meter, coax swotch, complete $200. 589-2648.

DINING ROOM TABLE - 6 chairs & server, walnut formica, Danish modern, $120. 567-9025.

BERKLY RECLINING CHAIR - gold fabric, good cond., $60. Ernie, Ext. 3357 or 281-7873.

DIRECTOR'S CHAIRS - (6), $10/ea. or $50 for all; (2) black/chrome Danish modern studios, $75; 6x8 brown rug, $25. Littenberg, 744-4789.

FISH TANKS - 70 gal., 29 gal., w/stand, many access., filters, pumps, heater, class tops, $100 takes all. 289-2043 after 5 p.m.

LAWN SPREADER - 18", like new, $10; upholstered armless chair, $15; free standing 42"x14" round bird cage, $20; upholstered swivel tub chair, $15; hexagon bird cage, 14"x12", $10; china closet, 48"Wx68"H, $30. Joe, 281-8943.

CAMERA - Canon 110 ED, F2 lens, auto., date printer on film, $40. Cas, Ext. 4489.

REFRIGERATORS - (1) Frigidaire, $75; (1) Hot Point, $80; both upright, white, very good condition. 289-3848.

MARIGOLD PLANTS - $1.10/doz., avail. Mondays upon request. Bill Stars, Ext. 3371, 3172, 4278 or 298-9648 after 5 p.m.

32" STORM DOOR - $15; glass shower door, $35; Sears shop vacuum, $30. Ext. 4098 or 736-4886.

TENT - Morsan, largest one family tent, good condition, $250. Ext. 3354 or 475-7250.

CANVAS TOP - for CJ7 Renegade Jeep, never used, beige, $200 or best offer. 286-1378 or 286-8041.

IEA CLARINET - trumpet; guitar, all reasonable. Ext. 4850 or 286-8433 after 6:00 p.m.

ATARI CARTRIDGES - Video Olympics, Warlords, 3D tic-tac-toe, Skydiver, many more, $10-15 ea. Kevin, Ext. 4261 or 654-8553 eves.

AIR CONDITIONER - Philco, 13,500 BTU, 110V, will demonstrate, $150. Hugh, Ext. 4669 or 924-3522 after 6 p.m.

FISHING EQUIPMENT - fresh water, fiberglass, Ted Williams model, spinning, 6'6", new w/new reel, $45; Harwell spinner, 6'6" fiberglass, $35; 9' fly rod, fiberglass, new, $45; bamboo fly rod, 8'6", 2 tips, alum. cas, $25; bamboo fly, H&I, 8'6", $15; rod caddy, opens to 65", $8. 289-6490.

PLANT SALE - vegetables, 20/$1; bedding plants, Cell-Pac, $.85. 878-8907.

WOMAN'S GOWN - size 10, blue flowered, short sleeve, new, $10. Angela Munsterman, 744-5871.

HAMS - Kenwood, TS-520S XCVR & DG-5 digital readout w/accessories, $400; hams, 11 elements, 2 meter beam, $15. 744-9677.

WATCHES - reasonably priced. Ext. 2043.

TENNIS RACQUETS - Wilson Break Pt., Wilson Pro Staff, Wilson T-2000, good cond., will accept best offer. Joe, Ext. 4477.

BOTTLE CAPPER/CORKER - $15; scallop dredge, $15. 289-0413.

SOFTBALL MITT - $5. Ext. 5177 or 4240.

VASE - beach bags; sandals; Kun Fu shoes; BB rocker. Chan, Ext. 3131 or 731-6881 weekends.

HEDGE TRIMMER - 22" double edge, B&D, $25; 16" B&D, $15. Ray, Ext. 4479.

ATARI 2600 CARTRIDGES - Centipede, Defender, Missile Command, Pac-man, never used, $20 ea. Richie, Ext. 7932.

ELECTRIC TYPEWRITER - portable, Olivetti Lettera 36 w/rigid case, hardly used, $100. Ted, Ext. 2101.

NIGHT TABLES - 2 w/draws, walnut, good cond, $30 for both. Ext. 2964.

GUITAR CASE - medium size, black w/yellow stitching, $15. Nick, Ext. 4701.

ELECTRIC BED - single, no side rails, good cond., $500. Ext. 4628 or 2549.

DISHES - Johnson Bros. for 8, perfect; shoes, Deliso Deb, 7C, gold/silver, almost new; life vest, excel. Ext. 4341 or 475-4005.

B&K FREQUENCY COUNTER - B&K CB, Service Master. Ext. 3783 or 732-6647.

CASEMENT WINDOWS - heavy duty, aluminum, screens, storms incl., various sizes, $20 ea. Niels, Ext. 4124.

MULTIVOX SYNTHESIZER - MX2000, excel. cond., $400. 363-2614 after 6 p.m.

FREEZER - Frigidaire, upright, 18.7 cu. ft., frost-free, excel. cond., $200. 363-6121.

KITCHEN TABLE - Butcher Block, round, 42" dia. w/3 leather swivel chairs, $200. 363-6121.

BATHTUB - Sears, new, fiberglass, avocado, right hand drain, in orig. carton, $60. Joe or Al, 588-7976 after 5 p.m.

FURNITURE - tables, chairs, lamps, couch, mattresses, household items, leaving for Europe. Ursula, 331-4596.

KING SIZE MATTRESS - boxspring & frame, $200; king/queen wicker headboard, $50; twin mattress, boxspring, $35; antique sewing machine & cabinet, $30. D. Hardy, Ext. 3389.

WEIGHT LIFTING BENCH - w/leg lift, like new, cost $80, asking $40; roller skates, mens, black, size 11, like new, cost $80, asking $40. Bob, Ext. 2517 or 331-3358.

FREEZER - Sears upright, frost-free, 15 cu. ft., like new, $300. 924-0185.

TRACTOR - Sears walk-behind, plow, snow blade, discs, cultivators, and sickle-bar, wheel weights, $350. 588-7976.

OAK FIREWOOD - 18" long x 6' x 2' (approx.), $20. 744-3792.

Car Pools

COMMACK - looking to join car pool, 8:00-4:30. Don, Ext. 2043.

COMMACK - ride needed beginning about July 25. 543-5279.

Garage Sales

SOUND BEACH - moving sale, 41 Amagansett Dr., Sat. June 18, appliances, antiques, clothes, etc., from 1 to $100. it all goes.

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

SHIRLEY - 3 bdrm. ranch, full basement, garaged and full patio, walk to stores and beach, $45,000. 399-4122.

BUILDING PLOT - over 1 acre, located in quiet residential area, fully wooded, asking $13,900 neg. with terms. 924-3236.

E. MORICHES - Newport Beach (near the Hamptons), 13 mi. from Lab, 3 bdrms., 2-1/2 baths, 2-car garage, laundry room, playroom with fireplace, fenced back yard, 2-zone heating, 1/2 acre, private beach & marina, $68,000. Ext. 2733 or 878-8491.

SMITHTOWN NORTH - Prime Landing Ave., 4.9 acre parcel, rolling, wooded w/pond, short walk to river, can be divided, low taxes, $99,000 w/terms. 744-1206.

PENNSYLVANIA POCONOS - lot, water, electric all year, nearby skiing, boating, $1,900. 878-4864.

MEDFORD PINES - 4 bdrms., 2 baths, d/r, eik, den w/fireplace, in ground pool, enclosed patio, 1/3 acre, assum. 7% morg., $59,900. Jack, Ext. 4274 or 289-6708.

WADING RIVER - Colonial Cape, 4 bdrms., 2 baths, d/r, eik, 2-car garage, 2100 sq. ft. on 175'x600' lot, Shoreham/Wading River School Dist., asking $115,000. Ext. 4313 or 929-4551.

For Rent

SHOREHAM - 4 bdrm. house, 2 full baths, full finished basement, covered patio, fully furnished, a/c, TV, bar, nice neighborhood. Ext. 3060 or 744-9081 after 6 p.m.

BELLPORT - 3 room apartment, furnished or unfurnished, 15 min. from Lab, private entrance, $250 pays all. 286-5882.

PORT JEFFERSON - Belle Terre, furnished, 3 bdrms., eik, l/r, d/r, den, central air, washer/dryer, beautiful grounds, avail. Aug. 1 or Sept. 1, for 9-12 months or longer, $875 per month plus utilities. 928-4899.

EASTHAM - Cape Cod, Aug.-Sept., 4 bdrm. house, sleeps 8, 2 baths, washer/dryer, dishwasher, deck, near beaches, $575 week. 722-3865 eves.

CONDOMINIUM - 6 mi. from Lab, 3 bdrms., 2 baths, a/c, pool. 744-3235 eves or weekends.

MASTIC BEACH - lovely 3 bdrm. house, fully furnished, near bay, avail. July 15, 1 yr. lease, $450. George, Ext. 4786 or 399-3609 eves.

NORTHEASTERN PENNSYLVANIA - waterfront cottages, excel. fishing, swimming, boating, private dock, heat & hot water, util. incl., $250/wk. 751-7140 or (201) 472-3222.

VERMONT HOUSE - reasonable vacation, family oriented, 3 bdrms., 2 baths, fireplace, fully equipped, beautiful view, woodland trails, Alpine slide, golf, tennis, summer theater, boating, fishing, etc., avail. weekly or weekends. 732-6499 after 6 p.m.

Wanted

HOUSE TO SIT - caring, experienced, responsible, no charge, August only. Jack Allentuck, Ext. 2412.

SUITCASE - with wheels, 28", light weight. Ext. 2674.

HOUSEMATE - share large 4 bdrm., 3 baths, 20 min. from Lab, sundeck, washer/dryer, $164/month + 1/3 util. Ext. 2521 or 928-8379.

JUGGLERS - clubs, balls, anyone who juggles or would like to learn. Carol, Ext. 3363 days.

OLD POCKET WATCHES - by collector, also watches and clocks in any cond. Al Campbell, Ext. 2043.

TREE REMOVAL - person to remove trees, take wood as payment. Pearl, 744-3807.

FILING CABINET - letter or legal size, reasonable, Ext. 4663 or 724-7891.

TO RENT - house or apt. for couple this summer. Ext. 4192.

OUTBOARD MOTOR - cash paid for your Johnson or Evinrude motor. 265-5218 eves.

RELIABLE TEENAGER - to help with garden work, now through Oct., 2 hrs/wk, excel. pay, Port Jefferson. 928-7826 eves.

LAWNMOWER - hand type, reasonably priced. Ext. 3564.

TO RENT - studio apt. or house, beginning in July for approx. 1 yr., prefer furnished, reasonable. Debbie, Ext. 3420 or 643-2261 eves.

SCUBA BUDDIES - for Long Island beach dives. J.P., Ext. 3403.

HOUSE TO SIT - long or short term, prefer North Shore, refs. Gavin Watson, 286-3679.

HOUSE TO RENT - Bayport, Blue Point area only, 2 to 3 bdrms. Carol, Ext. 3341 or 567-6433 after 6 p.m.

HOME FOR SHEPHERD-SCHNAUZER - spayed female, good watch dog, owner moving. Ext. 2959 or 751-1509.

COAL STOVE - Vigilante or similar type w/top exit flue pipe. Sanchez, Ext. 3848 or 698-8649.

FRENCH DOORS - wood, 2'6"x6'8" ea; sofa or library table, 5' long x 30' high (approx.). 744-3792.

BUTTERFLY WING CHAIRS - wrought iron, covers not necessary. Donna, Ext. 2926 eves.

WOMEN TO PLAY SOFTBALL - for fun and practice, Wednesdays, 5 p.m., field #6. No equip. nec. To check on field availability, call Mickey, Ext. 3173, bet. 4:30 and 5 p.m.

Ads for Services may be posted at the BERA Sales office.

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 4:30 p.m. Friday, for inclusion in the following week's Bulletin.

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