



## New Funds For ISABELLE

This week the Laboratory received confirmation that ERDA has allotted \$950,000 in Construction, Planning and Design funds to be used during the next several months to improve the cost estimate for the complete ISABELLE project.

The money will be used in two general ways. One will be to engage an architect-engineer to firm up the plans for the construction of buildings, utilities, and the main tunnel. The other will concentrate on studies by Brookhaven staff aimed at improving the conceptual designs of the myriad aspects of ISABELLE, and will include liaison with industry in order to provide the most realistic estimate for the cost of constructing ISABELLE.

The Laboratory is very pleased that ERDA has provided these crucial funds.

## Runners Go Scientific

On October 25-28, 1976, the New York Academy of Science will convene a conference that will address itself to the scientific and medical disciplines involved in exercise and athletic research. The conference will emphasize long distance running.

This will be the first meeting of its kind where the scientific and medical aspects of research in this area will be reported in one place. This will allow the conferees to discuss, analyze and criticize the state of the art concepts.

Further details may be obtained from A. Prince, Ext. 2901/2902.

## Stony Brook Events

Lecture: "Aging in a Youth-Oriented Society," by Dr. Barbara Silverstone, Chief of Social Services and Director of Outreach Programs at the Jewish Home and Hospital for the Aged, New York City, March 1 at 8 p.m., Bldg. F, Room 147, South Campus.

## Outfoxing The Opposition

Using a combination of techniques, a group in Biology has been charting the maneuvers of a particular bacteriophage - T7 - and has discovered how it takes control of the bacterial cell.

Bacteriophages, or "bacteria eaters" were so named because these little viruses can rapidly destroy a growing culture of bacteria. Since bacteriophages contain only a few genes and the entire growth cycle takes but a few minutes, they are ideal for learning how genetic information is expressed in living cells.

The T7 bacteriophage contains a single piece of DNA with about 30 genes, that is, information for making 30 different proteins. The small number of genes simplifies the research - by contrast, a plant or animal cell might contain thousands of genes.

The T7 DNA remains safe inside the T7 virus particle until a bacterial cell is encountered. Then the virus sticks to the cell and injects its DNA. When T7 DNA gets into a cell, proteins are "read" from the T7 DNA in the same way as the cell "reads" proteins from its own DNA. As the T7 proteins are made they convert the cell into a factory for producing hundreds of new bacteriophages.

Two of the first T7 proteins made after

## Relief For Guatemala

CARE has put out a call for contributions to provide vital supplies of food, medicine and blankets for the survivors of the massive earthquake which leveled large areas of Guatemala. More than 100,000 people are reported without shelter or food. Contributions which are tax deductible should be sent to CARE - Guatemala Earthquake Fund, c/o CARE, Inc., 660 First Avenue, New York, N.Y. 10016.

## Final Concert

The last concert of the season will be given by the Bartok Quartet, March 2, at 8:30 p.m. in Berkner Hall. They will present the "Lark" Quartet by Haydn, the Quartet No. 3 by Bartok and the Quartet Op. 132 by Beethoven.

## The Director's Column

On January 21, 1976 the President sent to Congress his budget for Fiscal Year 1977 (Fiscal Year 1977 covers the period October 1, 1976 to September 30, 1977). While ERDA has not yet advised us officially of all the amounts contained in this budget for Brookhaven's programs, preliminary information indicates that we can expect to receive a total of about \$75,000,000 in operating funds in the new fiscal year, compared with our allotment for the current fiscal year of \$69,500,000.

Our High Energy Physics Program is now earmarked to receive an increase of \$2,035,000. Biomedical and Environmental Research will be up by about \$1,000,000 (which includes the start up of a pulmonary program and a new program of policy analysis). A total of about \$1,000,000 is slated for several new projects funded by ERDA's Division of Buildings and Industry Conservation. Other changes range from an increase of \$465,000 for Molecular Sciences, to a decrease of \$157,000 for the Nuclear Sciences Program. There is also a construction project proposed for BNL: increasing the flux of the HFBR, at a cost of \$2,500,000.

There will be a so-called transition period (July 1, 1976 to September 30, 1976) to bridge the gap caused by the

shift to a new Federal fiscal year that commences this year. The already approved budget provides for continued operation of on-going programs at approximately their current levels during this transition period. At this point, of course, our budget for FY 1977 still depends on Congressional actions and subsequent allocations by the Office of Management and Budget and ERDA.

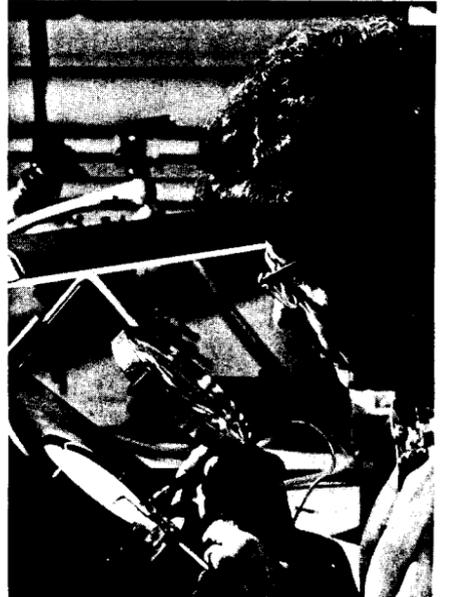
The increased overall allotment proposed for BNL continues the trend of the last several years. Much of the increase, however, is specifically identified with research and development projects on energy, particularly non-nuclear energy and energy conservation, in line with ERDA's new responsibilities. The funding level anticipated for some on-going programs at BNL is considerably less than the amount needed to offset the continuing escalation of costs.

We are now assessing the effects of the proposed FY 1977 budget, and are working out plans for next year's operations. As we receive more complete details of the funding amounts ERDA proposes for BNL, we will finish developing initial spending plans for each of our programs. As soon as possible we will provide you with more information.

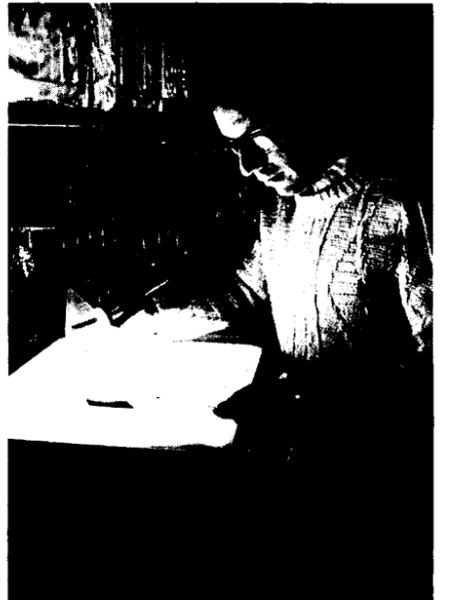
—George Vineyard



Bill Studier checks the refrigerator containing stocks of T-7 mutants. —Photo by Rosen



Olive Masem analyzing mutants. —Photo by Rosen



Alan Rosenberg scans an autoradiogram of some nucleic acids that have been analyzed by electrophoresis.

infection act to protect the T7 DNA from possible damage. One inactivates a bacterial "restriction enzyme" that would normally destroy foreign DNA. The second repairs damage the T7 DNA might have suffered during entry into the cell.

The final takeover of the bacterial cell is accomplished by two additional T7 proteins. One protein prevents the cell from reading its own DNA. The second is a T7 enzyme that reads *only* T7 DNA. From then on, T7 proteins are the only ones made and the T7 bacteriophage is in complete control.

Study of T7 at Brookhaven began nearly a decade ago when Bill Studier and Olive Masem began collecting and characterizing mutants of T7. With the help of Jake Maizel, a frequent summer visitor from the Albert Einstein College of Medicine, it was found that a gel electrophoresis technique could be used to identify all of the T7 proteins and to show which protein is made by each T7 gene.

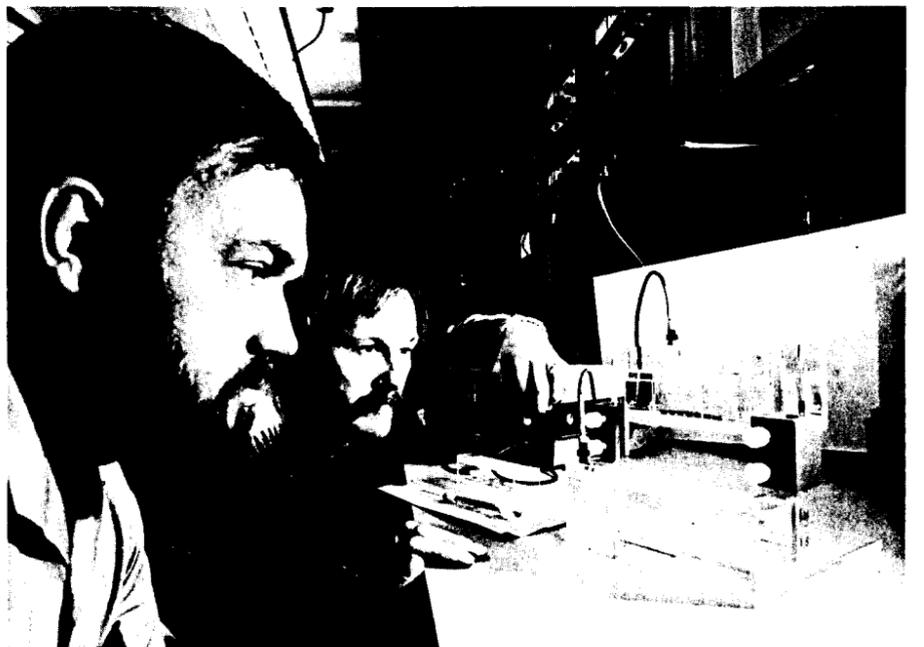
Gel electrophoresis is a simple but powerful technique for separating molecules. Gels are full of channels through which proteins and nucleic acids can move. When placed in an electric field, proteins and nucleic acids (charged molecules) are forced to move through the channels. Small molecules will be able to move through almost any channel, but large molecules can go through only the largest channels. Therefore, small molecules move rapidly through

the gel but large ones only slowly, and the molecules separate according to size.

A gel electrophoresis apparatus that can analyze 25 samples at a clip was developed by Studier, with the help of Gary McGovern, and was built by Bob Dillingham in the Instrumentation Division. This piece of equipment has proved invaluable for work on T7 and is now used for many types of biological research in laboratories throughout the world. McGovern has used the apparatus to analyze T7 nucleic acids as well as proteins.

More recently, Martha Simon has used electron microscopy to map specific genes in the T7 DNA, and she, Mike McDonell and Alan Rosenberg are using specific enzymes to cut up the DNA. Using gel electrophoresis, pieces of DNA carrying individual T7 genes can be isolated.

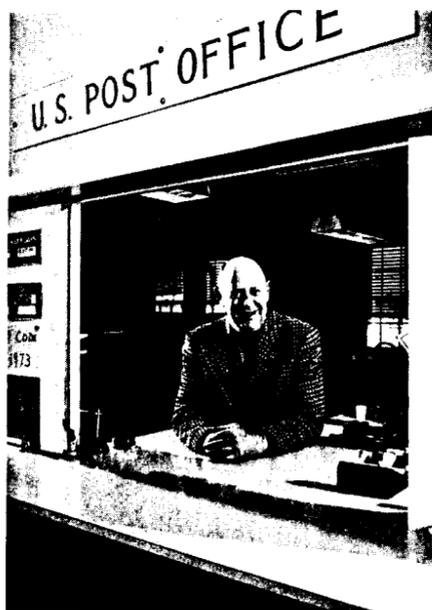
As a result of the work at Brookhaven and other laboratories, T7 is now one of the best understood viruses. Because it is so well understood, T7 is proving useful for analyzing the effects of radiation and environmental pollutants on basic genetic processes. The techniques and insights developed in working with T7 are also helping to understand the mechanisms of gene expression in more complex plant and animal cells.



Gary McGovern (left) and Mike McDonell watching an electrophoresis experiment in process.

## Selected Reading

- Impact Sci. Soc. 25, October-December 1975
- Young people's image of the scientist. M. Shallis and P. Hills. 275-8
- The younger generation and the 'crisis of science.' L. Witkowski. 287-94
- Science and technology: Liberation or oppression? D. Griffiths. 295-306
- Science and youth in the U.S.S.R. V.A. Zubkov. 313-21
- N.Y. Times Mag. February 15, 1976
- When the computer procreates. J. Bernstein. 9+
- The Super Bowl of birding. P. Wood. 30-3
- Phys. Today 29, February 1976
- Scientists with a secret. S.R. Weart. 23-6+
- Welcome to the post-industrial society. D. Bell. 46-9
- New Yorker February 9, 1976
- A reporter at large (energy-II). B. Commoner. 38-44+



Steve Garrett, Postmaster of the Upton post office since 1949 will retire on February 27. Born in Georgia, Garrett joined the U.S. Coast Guard in 1936 and served in that branch until he joined the Navy in World War II. Long a familiar figure on site, Garrett first came to Brookhaven as a Patrolman in 1948. After retirement, he plans to travel a bit but will continue to keep his base in Center Moriches.

—Photo by Rosen

## Reports Available

The following reports are now available to the Laboratory staff and to affiliates of the ERDA, AUI, and BNL. Others may purchase them from the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Virginia 22161. Staff members should call Ext. 3484:

- BNL-NCS-50446** \$8.75  
ENDF/B-IV Dosimetry File. April 1975.  
Edited by B.A. Magurno
- BNL-50462** \$5.50  
Concrete-Polymer Materials for Highway Applications. Final Report - June 1975.  
L.E. Kukacka, J. Fontana, and M. Steinberg
- BNL-50465** \$12.75  
Preliminary Assessment of a Hypothetical Nuclear Energy Center in New Jersey. November 1975.  
Energy Policy Analysis Group
- BNL-50467** \$6.50  
SSC: An Advanced Thermohydraulic Transient Code for LMFBRs. Quarterly Progress Report - July 1 - September 30, 1975.  
A.K. Agrawal
- BNL-NCS-50468** \$5.50  
Neutron Cross Sections of <sup>59</sup>Co below 100 keV. April 1975.  
S.F. Muchabghab, T. J. Krieger
- BNL-50469** \$4.50  
Exotic RF Systems for High Intensity High Energy Proton Storage Accelerators. September 5, 1975.  
J. Claus and M. Month
- BNL-50470** \$4.50  
Scheme for Current Accumulation in ISABELLE Using a Low Energy Stacking Ring. October 3, 1975.  
M. Month
- BNL-50472** \$6.50  
Hydrogen Storage and Production in Utility Systems. Second Annual Progress Report - August 1975.  
F. J. Salzano, Editor
- BNL-50480** \$4.50  
Intergranular Stress Corrosion Cracking of Sensitized Stainless Steels. First Quarterly Progress Report - July 1 - September 30, 1975.  
Reactor Materials Safety Group - Department of Applied Science

## Tune In!

#399

*It is very frustrating when a person comes into your employment office and finds there is a list of personnel requirements, but it is confidential! Why can't copies of personnel requirements be posted on a bulletin board in the office lobby so prospective employees can see if there is a possible interface for their talents?*

**Answer:**

The Personnel Office has been involved with the practice of listing nonscientific staff positions in the *Brookhaven Bulletin* and with the New York State Department of Labor and a host of other public agencies for approximately five years.

This practice is intended to keep employees and the community at large informed of employment opportunities and to also encourage application to the Laboratory.

Your suggestion to display these positions in our office lobby is an excellent one which will be adopted as a supplement to our existing practice.

## What Did He Say?

Here are a few puzzlers to amuse you when you need a rest from the really hard thinking you do all day long. The items below translate into well known sayings. As an example of what we mean:

*Prompt suturing enables the baseball team to survive.*

translates into

*A stitch in time saves nine.*

The answers will be published next week. The *Bulletin* would be happy to hear from anyone who would like to contribute similar items, or who has an idea for any kind of a puzzle. This week's items were concocted by Peter Rathvon.

1. The value of wild creatures is increased by a factor of two through subjugation.
2. For faster results use C<sub>2</sub>H<sub>5</sub>OH instead of C<sub>12</sub>H<sub>22</sub>O<sub>11</sub>.
3. Hurlers at Williamsport sport large pinnae.
4. The presence of an observer inhibits induced evaporation.
5. Felidae are non-reflectors at wavelengths other than those between .39 and .76 micrometers.
6. Physical fitness, material prosperity, and sagacity are products of a misplaced trust in a fast chronometer.

## In The Beginning Was The Word

A network of interlocking facilities which will take the word, transcribe, scan or digitize it, edit it, typeset and publish it, in a flow-through process, is beginning to take shape at Graphic Arts.

The first link in this chain, the Word Processing Center, has just added an instrument which will put your thoughts on magnetic tape as you think them. This process is called "Dial Dictation." You can pick up the phone, dial an access code and start talking. A recorder in the Center automatically records your words on a cassette. The tape is transcribed and a hard copy is returned to you for editing via a pick-up and delivery service. When returned to the Center the tape is played out and any editorial changes inserted. The process is repeated as many times as is necessary to polish your rough draft into a journal article, management proposal or scientific report.

If you're the type who writes everything out in longhand because you hate to dictate, you should still try Dial Dictation. If your words will involve multiple drafts, you should enter into the Word Processing System as soon as possible. The system is most efficient when the first draft of your words are on magnetic tape rather than in written form. The easiest way to do that is to read, or have your secretary read them into Dial Dictation.

This facility will be particularly helpful if you don't have a secretary, or when half the office is out with the flu and there is no one available to take a letter, a chapter of your manuscript or some other words of wisdom that can't wait.

Dial Dictation will operate 24 hours a day. With just one machine, the service is limited to one telephone line. If you get a

busy signal, hang up and try again in a few minutes. Let Graphic Arts know if the line seems to be busy every time you want to use it and they will try to add another.

The Word Processing Center went into operation September 1972 with two Word Processing Specialists and two IBM Magnetic Tape Selectric Typewriters. It has since added three more people together with a Redactron, which edits copy at 700 characters a minute and an IBM Memory typewriter which is particularly useful for letters and memoranda. The Memory machine has 50 internal storage locations and can reel out as many "originals" as needed. Once a particular letter has run its course, the location is used for a new letter.

The Center is a service of the Technical Photography and Graphic Arts Division and is located in the western end of Building 197. For more information about Dial Dictation, call Bill Bottinger on Extension 2955 or just stop in and see for yourself.



Twelve tape cassettes on the top of the Lanier provide up to six hours of unattended recording. The Dial Dictation System is available 24 hours a day and attended during normal working hours. If your requirements are immediate, you can put your thoughts on tape in the evening and have them on paper, on your desk, the next morning.

—Photos by Walton



The new, acoustically designed, Word Processing Center. The Lanier Dial Dictation Recorder can be seen on the counter; cassettes containing jobs in progress are stored on the wall. Dolores Janes transcribes from a recorded cassette on the IBM Memory Word Processing unit.



While the rest of us were shivering on Long Island a couple of months ago, Nat Greenhouse, Safety and Environmental Protection Division, was working in the balmy air of Micronesia. He traveled about 20,000 miles, portal to portal, in order to monitor background radiation and environmental radioactivity in Majuro, Ponape, Truk, Guam and Koror, in a survey conducted by the University of Washington's Laboratory for Radiological Ecology. The University has collaborated with BNL on Marshall Islands surveys and asked Greenhouse to bring the appropriate instrumentation for the ERDA-sponsored survey of the northwest tropical Pacific. In his off-hours, he found a congenial cranny in the rocks.

## Safety Alert

According to a GSA bulletin received, a number of cases of carbon monoxide poisoning have been reported in the press resulting from unsuspected exhaust gas entry into passenger compartments of cars. This is something to watch for, particularly if your car has been involved in an accident, or if you have been guilty of poor operating or maintenance habits.

After any collision, have the exhaust system checked to make sure the tail pipe has not been turned around and look for rear end body damage such as sheet metal tears and openings in seams, deck lid and tail gate distortions.

Do not operate your car at idle for prolonged periods of time with no clean air being vented into the passenger compartment. Check the carburetor idle mixture - too rich an adjustment can result in excessive carbon monoxide concentration in the exhaust gas.

If, for some reason, you must drive with the trunk lip open, adjust the heating or cooling system to force outside air into the car with the blower at high speed, or open ventilation inlets under the instrument panel.

Station wagon doorgate windows should be closed whenever the vehicle is in motion or stopped for an extended period of time with the engine running.

## Cooking Exchange

As previously announced there will be no meeting of the BNL Cooking Exchange on March 3. The next meeting will be held on Wednesday, March 17, when the topic will be "Meatless Main Dishes."

Remember, volunteer demonstrators are invited to the International Dinner in June. Insure your invitation; call Donna Coleman, 363-8914, or Judy Mills, 281-4472.

## Hospitality Committee News

The regular morning coffee is scheduled to be held on Tuesday, March 2, from 9:30 to 11:30 a.m., at the Brookhaven Center. Babysitting will be provided at no cost.

Mr. John Dietz, of the Safety and Environmental Protection Division, will show a brief film and offer us a discussion of "Fire Protection in the Home."

## Reminder

A Laboratory car leaves Bldg. 460 promptly at 3:45 p.m., Monday through Friday, to take passengers to Yaphank for the train to New York City. To secure a reservation, please call extension 2345 in advance.

**BROOKHAVEN BULLETIN**

Published Weekly for the Employees of Brookhaven National Laboratory

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**Letters To The Editor**

To the Editor:

To my friends at BNL - Thank you for your kind expressions of sympathy at a time when it was most needed.

— John McCafferty

Editor's Note: Patricia McCafferty, the daughter of John McCafferty, Accelerator, was killed in an automobile accident on Thursday, February 12, 1976. Patricia worked at the Laboratory for several summers running the children's program and as a swimming instructor.

**Rambling Around**

These are bits and pieces picked up from here and there with occasional observations by the Editor:

Besides being America's Bicentennial year, 1976 is also Leap Year. The astronomers of Julius Caesar settled the solar year at 365 days 6 hours. At the end of four years, these hours made a day which was added to the fourth year. In England it came to be known as Leap Year, for after February 29 a date "leaps over" a day of the week.

How women got into the act is unclear. The earliest date on record that this was a particularly favorable time for women to land a husband is listed as 1288 when a law was passed in Scotland "that for ilk yeare knowne as lepe yeare, ilk mayden ladye of bothe highe and lowe estait shall hae liberte to bespeke ye man she likes, albeit he refuses to taik hir to be his lawful wyfe, he shall be mulcted in ye sum ane pundis or less, as his estait may be; except and awis gif he can make it appeare that he is be-throthit ane ither women he then shall be free."

Soon after, France and two centuries later, Genoa and Florence, enacted similar laws. So far as can be determined, no such law ever found its way into the books here.

**Casting Call**

Charlie Brown and company have checked out after six packed house performances and there's a new show on the way.

George Bernard Shaw's "The Devil's Disciple" will be the Theatre Group's Bicentennial production slated for early June.

Director Bill Love sends out the call for tryouts from March 8 through March 12 from 5:30 to 7:30 p.m. at the Stage Two (Exhibit Hall). Tryouts are open to all. The cast includes ten men and four women.

**Save Gas And Still Get Around**



Recent visitors to the Laboratory had their own solution to conserving energy. While they were visiting the library, their steed munched happily on whatever was available outside. The boys hung a "do not disturb" sign around his neck so that he could forage in peace. —Photo by Walton

**There's Always A First Time**



An information session on apprenticeships was held last week to encourage women to apply for openings in the Craft Apprenticeship Training Program. To date, there have been no women apprentices at the Laboratory. Marie Travelli, Special Assistant for Women in Apprenticeship, N.Y. State Department of Labor, conducted the session. Also on hand to brief the would-be candidates were Renee Flack, Director's Office, Janet Whitehead and Peter Paige, Personnel. Application deadline is March 5.



About 30 persons participated in a week-long Brookhaven/Workshop on Alternative Energy Strategies Energy Modeling Seminar at the Laboratory starting February 23. From left to right, some of the participants are: Edward Griffith, Atlantic Richfield Co.; David Sternlight, Atlantic Richfield Co.; Ken Hoffman, head of the National Center for Analysis of Energy Systems in DAS; Steve Carhart, DAS staff member; and Paul Basile, M.I.T. —Photo by Rosen

**Arrivals & Departures**

**Arrivals**

Steven Carhart ..... Applied Science  
James J. Downing ..... Plant Engineering  
Leslie J. Joseph ..... Instrumentation  
Kenneth M. Novak ..... Applied Science  
Klaus H. Wiesemann ..... Accelerator

**Departures**

Kim O. Carneiro ..... Physics  
Masaaki Kobayashi ..... Accelerator

**Cafeteria Menu  
Week Ending March 5, 1976**

<b>Monday, March 1</b>	
Cream of Mushroom Soup	
Chicken a la King on Rice	1.10
Cheese Omelet & 1 veg.	1.00
<b>Tuesday, March 2</b>	
French Onion Soup	
Chinese Pepper Steak on Rice	1.20
Roast Fresh Ham & 1 veg.	1.25
<b>Wednesday, March 3</b>	
Split Pea Soup	
Breaded Flounder Filet & Fr. Fr.	1.10
<b>Special</b>	
Spaghetti w/Meat Sauce	
Garlic Bread	
All You Can Eat	\$1.00 plus tax

<b>Thursday, March 4</b>	
Cream of Chicken Soup	
Beef Hash & 1 veg.	1.05
Veal Pattie Parmigiana & 1 veg.	1.20
<b>Friday, March 5</b>	
Fish Chowder	
Broiled Filet & 1 veg.	1.10
Boiled Pastrami w/Mustard Sauce & 1 veg.	1.20

**French Club Presents  
"Conference Musicale"**

The BNL French Club will present Daniele Arpajou, pianist, in a "Conference Musicale" on Debussy, Fauré and Messiaen on Monday, March 8, at 8:00 p.m. in Berkner Hall.

This fine and sensitive young French artist is the laureate of several international prizes and has been acclaimed throughout Europe, North Africa, the U.S.A. and West Indies-French Antilles.

Donation \$2.00 for non-members. Refreshments will be served after the program.

**Bowling News**

Cathy Van Noy

**Pink League**

The "Pinsplitters" are leading the league in the third third after winning the second third. High games for the evening were A. Alberico 194, L. Boyd 180, M. German 160, H. Keeley 160, J. Gazzola 178, M. Brenner 174, C. Van Noy 170, R. Rosati 169 and R. Piccione 170. A. Alberico had a high gross game of 253 and R. Rosati won the pot with a 225.

**Black N Blue League**

The "Question Marks" have won first place honors for the second third. High games for the week of Feb. 11th were Lew Jacobson 209, Ellie Murgatroyd 170, Debbie Antonio 164. High for the week of Feb. 18th were Budd Pollock 212, Bill Lebitski 202, Frank Bugala 201, Debbie Antonio 162 and Wilma Eriksen 160.

**Green League**

The "Phoubars" still maintained their lead the week of Feb. 10th by taking seven points from the "Soc-Et-Tuums." The "Trouble Shooters" are keeping a cool second. The "Blue Jays" moved into third tying with the "Charlie Browns." The "Sparks" overpowered the "Neutrons" by taking eleven. 200 games were T. Iarocci 222 and N. Parrinello 220. The "Phoubars" are still maintaining first the week of Feb. 17th with the "Got-A-Hit-Ums" moving into second by taking eleven from the "Trouble Shooters." Lew Jacobson lead the "Got-A-Hit-Ums" by rolling a 202, 215 and 216 for a 633 scratch and a 720 gross series. The "Sparks" also tied for second by taking eleven from the "Charlie Browns." Tom Iarocci sparked the "Sparks" with a 215 and 216 for a 624 scratch and 678 gross series.

**Red League**

It was a great night for Ed Meier the week of Feb. 10th with a 220 and 212 for a 604 scratch to win his club award. C. Bachsmith missed his 678 award by six pins as the "Anachems" again knocked down over 3100 pins. 200 games were K. Riker 222, E. Gill 221, C. Buzzeo 211, J. Gerrero 211, L. Newman 207, R. Adams 204, J. Scesny 202 and C. Bohnenblusch 200. W. Kollmer is now bowling a 175 average and going up as he rolled a 219 and 217 the week of Feb. 17th. R. Jones missed a 600 series by 8 pins rolling a 210 and 203. Other games were J. Cain 214, J. Fontana 213 and J. Scesny 204.

**Purple and White League**

The "Sea Gulls" were still soaring the week of Feb. 12th leading the second place "Alley Oops" by 8 points. Marie Terrano bowled a 400 series and Art Lipman rolled a 223 for a 573 series. The "Alley Oops" were trailing the league leading "Sea Gulls" by 5 points the week of Feb. 19th as the two teams square off for the winner of this quarter. The "Sea Gulls" have the high team game with a 909 and the "Flounders" have the high team series with a 2478. High games were June Polistana 161-462, Betty Roche 185-456 series. M. Belligan 443 series, Ruth Duffy 170, Jim Petro 206-584, Jon Scott 232, Art Lipman 202, Gene Hassell 200 and Pete Austin 197.

**Bauernfeind  
NY State Archery Champ**

With monotonous regularity Joe Bauernfeind has been achieving perfect scores of 300 in the Sunrise Winter Indoor Archery League. The requirement for a perfect score of 300 is to properly direct 60 consecutive arrows into a 3" circle mark at a distance of 20 yards. No small feat - few people dare dream it!

Another plateau that Joe reached during a recent cold week-end in Syracuse was that of New York State Indoor Champion, which required another 300 effort. Such an honor prompted me to congratulate the champ through this media on behalf of all the sportsmen at BNL.

Is New York State Champ Joe's greatest potential? No way! Joe's potential can only be limited by his ambition. Those of us who know the diligent effort Joe has given to the sport, hope and expect a move toward national prominence. How does National Champion sound, Joe? No, it's not an impossible dream. Not too long ago a 300 score was an impossible dream.

— Carl Cantera

# Classified Advertisements

## Placement Notices

Each week the Personnel Office lists personnel placement requisitions, currently being processed. The purpose of these listings is, first, to give notice of all non-scientific staff positions being filled and, second, to give employees an opportunity to request consideration for themselves through the Personnel Office. In filling vacancies, the Laboratory's objective is to give first consideration to present employees, as follows: employees within the immediate group having the vacancy, employees within the department or division, employees within the Laboratory as a whole.

For further information regarding a placement notice, or to request consideration for an available position, contact Supervisor, Personnel Placement & Development, extension 2874 or 2882.

40. ENGINEERING ASSOCIATE III - BS degree or equivalent with major in engineering (nuclear, mechanical or EE). Responsible for the preparation and distribution of monthly, quarterly and annual progress reports and monthly management statements. Will also be involved in the preparation, control and general administration of operating budgets, financial reports and forecasts for the reactor safety programs of the Department of Applied Science. Department of Applied Science.

41. COMPUTER SCIENCE ANALYST - Applied Mathematics Department.

## Autos & Auto Supplies

TIRES - Used & recaps, most sizes, also extra rims, used alternators, starters & batteries. Ken, 289-8212 eves.

WIDE RIMS - 10:00x16.5 tires, will fit International 5 hole. Ken, 289-8212 eves.

65 TRIUMPH TR4A - Good cond, very good transportation, 21 mpg. \$625. Don, Ext. 4551, 281-6160.

68 FORD CUSTOM - 4 dr sedan, 302 engine, good mileage, needs some work. \$350. Ken, Ext. 3389, 399-2638.

TIRES - (3) 685-15" & (3) 645-13". 475-0144 after 6.

63 BELAIRE - 2 dr, standard, 6 cyl, one owner, economical transportation. 325-1961.

SNOW TIRES - (2) 7.35x14 (E78), \$5; (1) 14" Chevy rim, \$2. Sy, Ext. 3600.

SNOW TIRES - (2) Goodyear, wide rim, studded, D70-13, with rims. \$30. 878-4077.

74 HARLEY DAVIDSON SX 175cc - Road & trail, 1100 mi, showroom condition, dealer serviced, metallic blue. \$725. Joe, 281-4405.

RALLY RIMS - (4) 15", fits Chevy or Pontiac, sold for \$75. Sandra, Ext. 4207, 727-5158.

67 OLDS 98 - Ac/pb/ps, power antenna, seat, rear defroster, am/fm radio, tilted steering wheel, cruise control, trailer hitch. John, Ext. 2011, 475-0509.

74 1/2 RENAULT R17 GORDINI CONV - 107 hp, 34 mpg, see in front of BGRR. \$5050. 821-0303 eves.

TOYOTA COROLLA RIMS - (2) 12", \$7 each; 4 Toyota hub caps 12", \$5 each. Ext. 4121.

68 CHEVY STATION WAGON - V8, automatic trans, Pirelli radials, new battery. \$650. Ext. 3943.

CHROME - Set of side exterior piper, 6' long, 3 mos old, fits all cars & trucks. \$50. Steve, Ext. 4308/4304.

71 VEGA - Running cond, needs work. \$450. Ext. 4592.

69 PLYMOUTH BARRACUDA - 318 cu in, ps, vinyl, good running, ext and int very good. \$990. 473-0775.

72 FORD PICK-UP - 1/2 ton, standard, V8, snows, rails, tonneau cover, stereo tape, 6 1/2', excel cond. \$1995. Ext. 4068, 298-5092.

73 SUPER BEETLE - Red, am radio, undercoating, vent-shades, walnut dash, bumper guards, 2 snow tires, excel cond, 21,000 mi. \$2195. 473-3176.

SNOW TIRES - (2) E78-14, good cond. \$15 for pair. Frank, Ext. 4581.

69 MGB - Red convertible, econ, reliable. \$900. Murdock, Ext. 4851.

74 MOTORCYCLE - 125 cc Zundapp Enduro, excel cond, Koni shocks, 6" RWT, new tires, chain & sprocket. \$500. 878-4513 after 6.

## Boats & Marine Supplies

25' OWENS - Cabin cruiser, sleeps 5, 283 Flagship engine, accessories, very good cond. Fred, 281-6468 weekends & eves.

REBUILT ZENITH MARINE CARBURETORS - (2) for Chrysler & similar sizes, (1) W/2 1/16 bolt centers for 1 1/2 bore; (1) W/2 1/16 bolt centers for 1 1/4 bore. Jack, Ext. 4087.

MUSHROOM ANCHOR - 100 lb, w/35' of 1/4" chain, buoy & nylon pennant. Ext. 4121.

9' SAILING PRAM - Gaff rigged mast, sail, etc. \$175. Bill, Ext. 3992.

23' PEMBROKE SPORTFISHERMAN - Flying bridge, d/f, canvas, 6 cyl, extras, good cond. \$1650. Laird, Ext. 4068, 298-5092.

28' LUHRS - Sedan, '63, f/b, rebt 225 hp, f/w/c, self-contained head, galley, sleeps 6, d/f, s/s, extras, dry docked. \$3800. 878-4368.

## Miscellaneous

GIRL'S COAT - Suede cloth, good cond, size 9. \$20. Jerry, Ext. 3334.

BOY'S COAT - Corduroy, mighty-mac, excel cond, size 8. \$15. Jerry, Ext. 3334.

78 RPM RECORDS - Jerry, Ext. 3334.

PLAYPEN - W/matching mattress, mesh sides, 40"x40", good cond; automatic swing w/music box, like new. S. Spark, Ext. 4111.

SKI BOOTS - 5-buckle, size 12, excel cond. \$25. Jerry, Ext. 3334.

GE REFRIGERATOR - About 12 cu ft, very good cond, gold. \$50. 363-6606 after 3.

MAPLE KITCHEN SET - Umbrella stroller. 289-8212.

ANTENNA - 1210 Channel master, assembled, excel cond. \$30 or best offer. 751-3062.

TRANSMITTERS - (3) ARC-5 xmtrs covering from 3-9 mc, all in good cond. \$10 each or \$25 for all 3. Don, Ext. 4551.

DESIGN CONSOLE - Variable sine & square wave gen, variable dc (0-30V), 12.6 vct ac, 180 vdc speaker, transformer & breadboard ckts. Don, Ext. 4551.

PIANO - W/bench, excel cond, 1 owner. \$250. J. Rebman, 472-0136.

HOTPOINT REFRIGERATOR - 15 cu ft, energy saving type, top loading freezer. \$55. Bob, Ext. 4551, 289-2159.

GAS STOVE - (2) 30" Welbilt gas stove, \$15; 30" Hardwick gas stove, \$20. Bob, Ext. 4551, 289-2159.

ELECTRIC STOVE - 40", Frigidaire, 3 surface elements, 1 deep-well cooker, auto oven timer. \$20. 286-0880.

POOL TABLE - Minnesota Fats, 4'x7'. \$25. Fred, 281-6468.

MINK COAT - Natural mink, full length, size 12-14, good cond. 472-0509.

TABLES - Cut glass, 12'x18' Belgium-made oriental rug, Victorian chairs. 472-0509.

DESK - Early American style, knee-hole. \$50. 589-3269 after 6.

MOVIE CAMERA - Revere, 8 mm. \$25. 589-3269 after 6.

OIL TANK - 275 gal, 10 gauge. \$30. 286-8718 after 6.

SPRING COAT - Size 12, \$12; blue blazer, size 12, good cond. Ext. 3609.

SHIRTS - (3) brand new, (1) long sleeved brown, 15-33; (1) long sleeved white, 15-34; (1) half-sleeved green, 15. \$3 each. Ext. 3609.

SHOES - Brand new, brown leather Hush Puppies, men's 9M. \$15. Ext. 3609.

2 STAMP VOLUMES - \$3 each. Peggy, Ext. 3148.

LADIES SKI BOOTS - Leather, double laced, size 6, excel cond. \$8. Lorraine, Ext. 3595.

TV - B & w, 19" Motorola table model, working, \$35; Turntable, Dynavox, 2 matched speakers, dust-cover, headphone jack, \$25. Ext. 4532.

FISH TANK - 50 gal, hood, pump, filter, gravel, fish. \$75. 475-8766.

LIGHT FIXTURES - \$4 & \$5 each; plant hangers, gold, \$3; spring coat, size 14, \$12. 744-5871.

FIREPLACE HEATING UNIT - Increases heat output 600% inserts into fireplace with blower-motor, new. \$89. Marilyn, 924-6582 after 6.

ANTIQUÉ BEDROOM SET - Mahogany headboard, footboard, dresser & vanity, both w/mirror. \$200. 878-4077.

CAMERA - Konic auto S-3 w/case, range finder w/38 mm F/1.8 lens, fully automatic exposure control. \$100. Pluta, Ext. 2957.

WEDDING DRESS - Size 14; yellow spring coat & dress combination, size 14, worn once. Price negotiable. 698-9751.

MOTOR MANUALS - From 50's & 60's, \$5 each; new baby bottle sterilizer, \$10. Fred, Ext. 4597.

RCA TV - B/w, 19", good cond, new parts. \$25. Fred, Ext. 4597, 475-4935.

OVAL BRAIDED RUG - 10'x13', wool, fringed, shades of gold & brown, fine cond, very colonial. \$20. 286-8805 eves.

8 MM PROJECTOR - Keystone, very good cond, zoom lens, auto thread. \$25. Fred, Ext. 4597, 475-4935.

ALL WEATHER COAT - Misty Harbor, women's size 10, poppy color, full length raincoat, w/zipout lining, worn once. Orig \$75. Linda, 698-9121.

SKI BOOTS - Molitor, size 11. \$10. Ext. 2885.

PORTABLE PHOTOGRAPH - \$20. Ext. 3922.

CHANDELIER - Black wrought iron, 10 arm, \$50; satin drapes, cover 10' wall, antique green & white, \$50. Ext. 4532.

HEADBOARD - King size, \$30; sofa bed, Danish modern, rolls out from bottom to sleep 2, \$100. Ext. 4532.

BEDROOM SET - Walnut formica, like new, double bed, complete bookshelf headboard, triple dresser, highboy, 2 night tables w/lamps. \$250. 289-0243.

DINING ROOM - Walnut formica china cabinet, 4' table extends to 6', 6 chairs. \$150. 289-0243.

US DIVERS' ROCKET FINS - 1 size fits all, new cond. 2 pair for \$19 or \$10 each. Naomi, Ext. 3699.

DINING ROOM SET - Table w/leaf opens to 33"x60", wrought iron legs, 4 chairs, buffet 45"x16", formica inside & out, black oak pattern. \$150. 727-7515.

REFRIGERATOR - 12 cu ft, \$50; kitchen double sink & 5' counter top, all fixtures, \$40. bathroom sink & fixtures, \$25. 727-7515.

ELECTRIC SNOWBLOWER - Sunbeam. \$30. Ext. 4240, 286-0295.

ELECTRIC WALL OVEN - Very good cond, yellow front. \$15. Ext. 4240, 286-0295.

8-TRACK AUTOMOBILE STEREO - Panasonic, complete w/speakers, tapes & tape holder. \$30. Bob, Ext. 4551, 289-2159.

GAS RANGE - 20" oven & broiler, coppertone, like new cond. \$45. Dick, Ext. 3860, 698-5298.

VANITY TABLE & STOOL - \$10; student desk, \$10; maple desk, 6 drawers, \$30. 878-0123 after 5.

ARIENS TRACK TEAM - Tractor, lawn mower, vacuum cleaner, 2-stage snow blower. \$1000 value, now \$400. 744-3312.

OSCILLOSCOPE - EICO 460, Heathkit model EF-2, test chassis & all manuals, all new in cartons. \$130. D. Vail, Ext. 2046.

UTILITY TRAILER - Homemade from Crosley parts for use w/sub-compact car. \$40. Ext. 4692.

PHONO CARTRIDGE - Shure V15 type 3, used about 10 hr. \$40. Ext. 3828, 751-7250.

GLASS LINED WATER TANK - 42 gal, new. \$70. George, Ext. 4304, 698-6051.

AQUARIUM SUPPLIES - Heaters, \$1.25; outside filters, \$2.00. Ext. 4024.

CAST IRON STOVE - Small, \$25. 744-2493.

BEDROOM SET - Mahogany, double dresser w/mirror, chest, headboard, 2 night tables. \$350. 744-2493.

FREE PUPPIES - 7 min fox terrier mix, will stay small, need a home & good people to take care of & love them, solid colors, brown & 2 black, beautiful. 588-4703 after 5.

ELECTRIC RANGE - Eye-level, 2 automatic ovens, pull-out surface unit, good cond. \$100. Mike, 281-6070.

ORCHID PLANTS - All potted. \$8 & up. Marie, 475-9088.

## 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

WADING RIVER - 3 bedrm ranch, living rm w/fireplace, w/w carpeting, kitchen, dining, full appl. lg 2-car garage, full basement, private beach, established residential area. \$49,500. 345-3512, 929-4270.

STRATHMORE/RIDGE - Condominium, 2 bedrm ranch, self-cleaning oven, range hood, dishwasher, washer/dryer, upgraded carpets, central air. \$24,990, will talk. 924-3666 eves.

CALVERTON - Townhouse, 3 bedrm, 1 1/2 baths, w/w carpet in all rms, central air, 5 appl, 15 min to Lab. Asking \$27,000. Ext. 2978, 369-2526 eves & weekends.

BROOKHAVEN - Colonial 4 bedrm, 2 1/2 baths, 2-car garage, full basement, fireplace in lg living rm, formal dining, country kitchen, den, 3/4 acre plot. Middle Island Schools. \$49,900. 286-0158.

NORTH SHORE - 3 bedrm, 1 1/2 baths, partially finished cellar, knotty pine interior, fireplace, 20'x30' garage w/pit, 23,000 btu ac, appl, 20 min to Lab. \$246 taxes. \$30,000. 744-3312.

PATCHOGUE VILLAGE - Custom ranch, 6 rooms, oak floors, paneling, 5 appl, excel cond, many extras. \$32,000. 475-2534.

ROCKY POINT - 3 bedrm ranch, 15 min to Lab, full basement, storm windows, yard w/fence, hot water heat, will consider renting also. 744-4988.

CUTCHOGUE - 1 acre bldg lot, water view, beach rights, near schools, shopping. Asking \$15,000. G. Laird Stubbings, Ext. 4068. 298-5092.

VILLAGE OF SHOREHAM - Large custom ranch on wooded acre, living rm, formal dining, kitchen, dinette, 3 bedrms, 3 baths, sunken den w/fireplace, 2-car garage, patio. \$92,000. 744-2493.

PORT JEFF AREA - Hi ranch, 15 min to Lab, beautiful home, landscaped shrubs, 4 bedrm, living, dining, den, 2-car garage, work shop, ac, pool, carpeted. 473-7833.

MEDFORD - Birchwood Blue Ridge, kitchen, dining, living rm, bedrm, w/w carpet, washer, dryer, thermo-pane windows, screens, central air, patio, clubhouse, pool, golf, tennis. Below cost, \$30,500. 732-5252, 475-2306.

MASTIC - 3 bedrm ranch, 100x100. \$32,000. 7.5% second mortgage avail or \$270/month. 654-0699.

EAST MORICHES - 150 yr old renovated school house on beautiful acre, 3 bedrms, 1 1/2 baths, living rm, playrm, all appl, w/w carpeting, extra lg country kitchen. Dunn, 878-4184.

## For Rent

WADING RIVER - Large 1 bedrm basement apt, furnished, util incl, private beach, 15 min to Lab. \$250/month. 929-8443.

BROOKHAVEN - Room w/kitchen privileges. Ms. Ripperger. 286-0247 after 8.

VERMONT VACATION - 3 bedrm mobile home w/ fireplace on 10 acres, 10 min from Owemo Mt. Close to 7 major ski areas, weeks or weekends. Bob, 473-8186.

CALVERTON/RIVERHEAD - Townhouse, 3 bedrms, 1 1/2 baths, ac, all appl. \$289/mo + util. 488-2497, Ext. 2445.

## Wanted

TRUNK - Preferably steamship size, must be sturdy & intact w/lock, appearance unimportant. Rick, Ext. 3979, 929-6820 eves.

ELEC MOTOR - 1/2 or 3/4 hp, 3450 rpm. Ext. 2422, 878-2197.

PORT A CRIB - Reasonable, good cond, for use in church nursery. Margie, 281-1169.

HOME - For man's best friend, intelligent, lovable, loyal. 589-3269 after 6.

OLD EYE GLASSES - Any kind, shape or color. Peggy, Ext. 3148.

SMALL SAFE - Saxon, 929-4701.

AUTOMOBILE - 1965-9 vintage, good cond. Bob Walton, Ext. 2388, 286-8535.

SERVICE MANUALS - 66 Dodge or 69 Ford. Ext. 4663, 751-5479 eves.

STUDIO APT TO RENT - Responsible young man, Islip/Hauppague area. \$120/130 month. Russell, 744-3792.

STAMPS - Foreign & domestic, send to Claire Hull, Bldg 490, Ext. 3655.

SCUBA COURSE - Persons interested in basic scuba course contact lifeguard between 11:30 / 1:30. Ext. 3496.

SPINET PIANO - Excel cond, full keyboard. Betty, Ext. 3699, 661-4086 after 5.

RALLY WHEEL - 14x7, for 73 Camaro. Bob, Ext. 2405.

PHONO RECORDS - 1950's & early 60's, r&b, r'n'r, 78's, 45's, albums. D. Vail, Ext. 2046.

## Carpools

MILLER PLACE - Driver needed for 3-person carpool. Ext. 3609.

RIVERHEAD - Driver wanted for existing 4-member carpool from Riverhead. Pat, Ext. 4519.

## Lost and Found

LOST - 1 pair safety glasses in black case. Frank, Ext. 4581.

LOST - Rapidograph pen, Bldg 510 D, Room 2171, borrowed & not returned. Ext. 3491.

## Services

TREE REMOVAL - & chain saw work, experienced, free estimates, hauling, stump removal, cord wood. Ken, 289-8212 eves.

HANDYMAN - No job too small or large. 281-5296.

BABYSITTING - My home, day or night, weekdays or weekends, good atmosphere, reasonable. Claire, 289-0633.

TAXES - Prepared by professional tax consultant, your home or mine, very reasonable rates. John, 732-2472.

AUTO BODY - Repairs & refinishing, free estimates. Bob or Lou, 727-9669.

TYPING - All sorts, reasonable, references. Ext. 3609.

CARBURETORS - Marine & auto, expertly rebt, repaired, sold. Jack, Ext. 4087.

DOG OBEDIENCE CLASSES - Begin 3/1 at 7:30 p.m., Patchogue. Phil Warner, Ext. 4636 or Marie, 363-9524 for info.

VW MECHANIC - Excel work at reasonable rates. Pete, 281-0268.

BABYSITTING - Will babysit in my home, Bellport. Judy, 286-3404.

TAXES - Prepared by professional tax consultant, your home or mine, reasonable. John, 732-2472.

PAINTING - Inside, outside, paneling, stucco, beam work. Steve and Ron, 732-8273.

ROOFING - & Exterior carpentry, also finish carpentry, experienced. 281-2628.

PAINTING - Interior & exterior,, college seniors, refs avail. 751-6431.

TAX PREPARATION - Reasonable rates, eves & weekend appointments. Cliff, 655-5640.

## Classified Ad Policy

Deadline is 12 noon Monday for publication Friday of the same week.

- The Brookhaven Bulletin's classified section may be used only by active and retired Laboratory employees.
- All items for sale or rent must be the advertiser's property.
- Ads for material acquired for resale in association with a full or part-time business cannot be accepted.
- Firearms offered for sale or trade may not be brought on site.
- Ads not carried because of space restrictions will be held for publication in the next issue.
- Ads are run only once and must be resubmitted if they are to be repeated.
- Ads should be restricted to 20 words or less and typed or printed on the form provided, and must bear the employees signature.

<input type="checkbox"/>	For Sale: Auto & Auto Supplies	<input type="checkbox"/>	Wanted	Check <input type="checkbox"/> the heading applying to your ad. Print or type your ad in 20 words or less.
<input type="checkbox"/>	For Sale: Boats & Marine Supplies	<input type="checkbox"/>	Carpools	
<input type="checkbox"/>	For Sale: Miscellaneous	<input type="checkbox"/>	Lost & Found	
		<input type="checkbox"/>	Services	

Ads concerning property for sale or rent cannot be accepted on this form. Special Real Estate Ad forms are available at the Office of the Brookhaven Bulletin, Room 111, 40 Brookhaven Avenue.