BROOKHAVEN BULLETIN
Volume 34 - Number 32 / August 15, 1980
BROOKHAVEN NATIONAL LABORATORY

Don Makowiecki with two harpsichords he built. In the foreground is the Italian model, weighing only 35 pounds. The other is a larger concert model of Flemish design. Both follow designs from and pre-dating the 17th Century. —photo by Humphrey

Soundboards and Centerboards

If you ask Don Makowiecki what he does for a living, you get a description of a new data gathering standard that streamlines assembly of BNL computer data. That's his job, designing the new standard.

But man doth not live byte by byte. Away from floppy disks and blinking diodes, Makowiecki builds harpsichords, keeping alive the days when music was Bach and mathematics meant Leibnitz.

Makowiecki works in his damp but cool basement in Bellport. His tools are neatly aligned on the wall, and the work area is clean. A plain, unfinished wood box sits on the workbench under fluorescent lights. It is a partially finished harpsichord.

"These struts," he says running a finger along a diagonal brace, "are oak and support the soundboard, so they have to be strong. The others are spruce, and the box itself is poplar. The ones upstairs are Sitka spruce and Alaskan cedar."

Upstairs refers to the living room, where two completed harpsichords are parked next to each other. The Flemish model is chocolate brown and about 11 feet long. The Italian model is smaller, about eight feet long, and of unstained cedar. They are the two of his four harpsichords he doesn't rent. The others are out visiting other homes, bringing in about $70 per month in rental fees.

Going Baroque

Makowiecki turned to the harpsichord about four years ago to accompany Birgit, his 12-year-old daughter, who began playing the recorder. He was starting from scratch. Up to that time, the extent of his musical menu included some French horn in high school, and plucking a string bass in a polka band in New London, Conn. in the early 1960's. But keyboard, that was something new.

Intrigued by a magazine ad for a harpsichord kit, he decided to build one and learn to play. It was difficult at first, since he and Birgit were living in a cramped, none-too-private apartment near Zurich, where he was working at the Swiss Federal Institute's Laboratory of High Energy Physics.

But struggling with the kit and studying the ways of the harpsichord, curiosity grew into interest, interest into enthusiasm. He attended concerts, visited builders and frequented music museums in Antwerp and Munich.

In 1978, he returned to the U.S. "ostensibly to build harpsichords, but I sort of chickened out. It would take too much time. I'd be working 15 hours a day, and Birgit, who I'm raising alone, would have to be by herself."

He had developed a modest reputation as a builder and received some offers to turn professional – the Boston Center for the Arts asked him to build harpsichords – but he decided against it. Rather, he became one of 40 nationwide representatives for the Zuckerman Harpsichord Company of Stonington, Conn. The arrangement is a loosely structured franchise. On his own time, Makowiecki builds, sells, rents and maintains Zuckerman harpsichords, which are available as $940 kits.

"People tend to think kits have funny, cheap connotations. Actually, 90 percent of all harpsichords are made from kits," he points out. Harpsichord kits are not the equivalent of painting-by-number or U-Bolt-Em toys, but require quite a bit of skillful jointing and fitting. Assembly location is critical. An instrument to be used in Islip, for example, must be built in a place that has a similar humidity range, otherwise, the soundboard will crack. For this reason,

(Continued on page 2)

Meteorologist Eyes Eclipse

Last February, S. SethuRaman traveled 24,000 miles to do a two and a half hour experiment.

SethuRaman is a meteorologist with the Atmospheric Sciences Division of DEE. He went to India with the 1980 Solar Eclipse Expedition, sponsored by the National Science Foundation, to study the total solar eclipse that occurred on February 16.

Most of the team was made up of astronomers, who are interested in movements of celestial bodies. As a meteorologist, SethuRaman studies the earth's atmosphere. The eclipse gave him a unique opportunity to study the boundary layer – that portion of the atmosphere close to the earth's surface. According to SethuRaman, this was the first time such an experiment was done during a total eclipse.

Total solar eclipses occur 69 times every 100 years. Even though dates, times and locations of eclipses are predictable, they usually happen over remote areas, making experimentation difficult. The last one extensively studied was in Africa ten years ago.

The eclipse in February began in the central Atlantic Ocean and ended in the Szechwan Province of The People's Republic of China. Traveling at over 2000 miles per hour and covering a swath of the earth nearly 100 miles wide, it passed over the southern part of India, where the solar expedition conducted most of its experiments. At that time of year in India, skies are usually clear day after day. Also, the path of the eclipse passed directly over an observatory, an ideal situation for astronomers in the group.

In collaboration with the Indian Institute of Science, SethuRaman did his experiment in Raichur, a small inland town of 100,000 population. Raichur is the second largest producer of cotton in India, and SethuRaman set up his equipment in a cotton field.

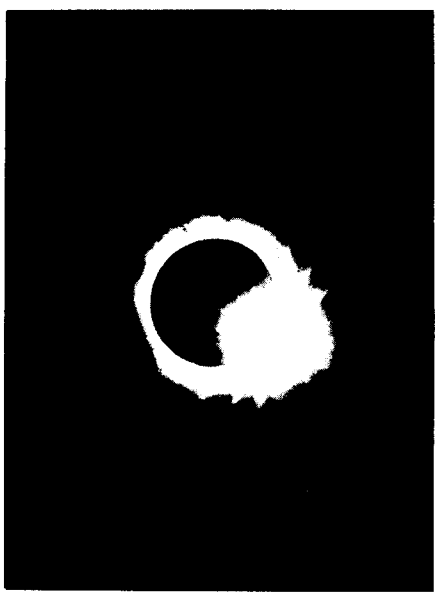
To make sure that his observations during the eclipse were free from local effects, SethuRaman conducted his experiments two days before and two days after. He used balloons to carry instrument packages aloft and a tower with instruments attached at different elevations.

A total solar eclipse is described in what are called contacts. The first contact is when the moon moves in to "touch" the sun. The second contact is when the moon is totally in front of the sun. The third contact is when the moon first begins to leave the sun, and the fourth contact is when the moon has passed across and is touching the sun on the other side.

SethuRaman said that the time interval between the first and fourth contact was 2 hours and 30 minutes. The duration of totality, when the sun was totally behind the moon in the second contact, was 2 minutes and 42 seconds.

Most of the changes in the boundary layer occurred in the first hour. Reporting one qualitative observation, he said, "Cumulus clouds normally developed in the afternoons. When the eclipse began at 1425 Indian Standard Time, the earth started cooling, the convective boundary layer collapsed and the clouds fizzled out before contact. When the sun reappeared, they reformed."

Since February, he has been analyzing data gathered during the eclipse. Preliminary results showed variations in heat flux and turbulence before, during and after the eclipse.



During a solar eclipse in India, this picture was taken just before the second contact, with the moon not yet totally in front of the sun. An astronomer with the solar expedition from the United States used a 35 mm camera equipped with a 500 mm lens.

Also, cooling of the air, with surface-based inversion, occurred over the entire thickness of the boundary layer.

SethuRaman described the eclipse as an astounding sight. He observed Bailey's beads (pearly bright spots caused by sunlight peeping through valleys and crags around the rim of the moon), celestial diamond rings (sunlight sparkling through a lunar valley), shadow bands (just before totality, shadows that wave across the earth's surface), and the corona (the halo of the sun's atmosphere around the moon).

Before and after totality, he used a sheet of mylar to watch the eclipse. During totality, he viewed it with his bare eyes, the only time it is safe to look at the sun without eye protection. "The totality was quite eerie," he said. "It was not the complete darkness of night. I could see light on the horizon."

Weekend Tour

Visitors to the Lab this weekend will learn about BNL's program in solid state structural chemistry. This research may have future implications in such diverse areas as energy, where new catalysts might allow more efficient use of fossil fuels, and medicine, where an understanding of exactly how a drug works could lead to the development of more effective drugs which have fewer side effects.

The complete tour of the Lab also includes a viewing of "Brookhaven's Quest," a guided bus tour of the site, and a visit to the Exhibit Center.

Doug Humphrey

Students in a health physics training program check out their gear as they prepare to respond to a simulated emergency.

Health Physics In The Field

The smoke seemed to swallow them up as they stepped into the warehouse. It was sticky hot and they could barely see. They wore coveralls, face masks and air tanks, and carried radiation survey instruments, all used for their protection. They didn't know what they would find, but they had been trained to search first for victims.

Within minutes, they struggled out with a body.

A scene out of a TV series about an emergency rescue squad? No, it happened right here on site. But not the way it reads.

The victim was Annie, a ten pound mannequin. The smoke came from several smoke bombs. And the rescue team was going through an emergency drill.

The drill simulated an emergency response in which the team also had to identify and control chemical and radiation hazards. It was a final lab exercise, which required them to use skills developed all summer long.

The rescue team is made up of 13 students enrolled in a ten week summer training program in health physics, funded by DOE, through the Safety and Environmental Protection Division. Eleven are graduate students in environmental health programs from universities all over the country, and two are BNL employees.

Mary Pat O'Brien, Training Supervisor for the division, coordinates the program. In operation for over 20 years, it offers broad training in health physics or radiation safety. It also includes some training in industrial hygiene.

"The program stresses application," said O'Brien. "It gives the students hands-on experience and a chance to apply what they've learned in school."

The curriculum is divided into four parts. The first week, they visit different facilities to learn about health physics operations at BNL. During the next nine weeks, their time is divided between lab exercises and individual projects. They also spend weekends and evenings preparing seminars on topics ranging from nuclear waste disposal to the evaluation of risk.

The students work closely with their project advisors, who are predominantly division staff. But some of the projects are done with scientists in other departments. "The emphasis here," said O'Brien, "is to take a problem, develop a method to solve it, and do experiments or collect data to work toward a solution. We expect professional thinking and critical evaluation."

"The intent of the program is to provide the students with operational skills to help them develop into competent health physicists. We show them a slice of the real world."

Soundboards (Cont'd)

most of Makowiecki's instruments go to places with humidity like Bellport's.

Finishing, of course, is an exhaustive repetition of painting, sanding, painting, sanding and more painting, until the final polish with pumice and an oiled leather strop.

But the product isn't complete once the strop has imparted a satin gloss. Since the builder must know the subtleties of how each instrument plays, Makowiecki pulls out a sheet of Bach or Scarlatti and adjusts the action. As he constantly strives to improve his building skills, he does the same with his playing and is now in his third year of lessons, for which he travels to New York several times monthly.

Out of the Parlor, Down to the Bay

Don Makowiecki's woodworking doesn't end with harpsichords. Applying skills he picked up building harpsichords, he last year purchased and started rebuilding *Marie*, a 24½ foot Great South Bay Cat Boat, built in 1890. He refers to her original condition as a "basket case – you put all the pieces in a basket and carry it away." It was in sad shape. The more he poked, the more rot he found, so he began, patiently, from scratch, replacing all 26 sets of ribs. Then he reworked the hull boards and sealed the ribs and boards with epoxy, giving the hull the seaworthy integrity of a monocoque construction. And he replaced the heavy steel centerboard with a lighter plywood one. "This way, you don't need a winch. You can handle it alone." It was one return to authenticity.

He also arranged the planking on the aft deck in a pleasing herringbone pattern. Another return to authenticity. Altogether, when *Marie* is ready for launching in a few weeks, she'll have a few touches of custom fit, finish and appointment.

That's the way Makowiecki moves through his projects – following the authentic design, except when he thinks of something better, then he adds it in a style that merges unobtrusively with the original lines.

—James Kent

Selected Reading

Am. Sci. 68 (4), July-August 1980
How we perceive depth from flat pictures. R.N. Haber. 370-80

New Sci. 87 (1212), July 31, 1980
The New Scientist Interview: Fang Lizhi. J. Hall. 378-80

Scholarship Alert

Up to ten 1981 AUI Trustee Scholarships will be awarded to children of regular employees of Brookhaven National Laboratory. Awarded competitively, the scholarships are renewable for up to four years of study toward an academic degree. In addition, up to three scholarships may be awarded to minority group children of employees of BNL and NRAO; eligibility will be determined by applicable federal criteria.

To qualify for a scholarship, the applicant must be a son or daughter of a regular employee of BNL who began full-time employment no later than January 1, 1980, or a son or daughter of a retired employee or of an employee who died when in regular service at the Laboratory. In the case of stepchildren, eligibility will be established if the employee regularly claims the child as a dependent for income tax purposes.

Eligible applicants must be secondary school seniors who will be graduated during the current academic year and entering college in the fall.

Each scholarship will be in the amount of $1,500 per year and is paid directly to the college.

Selection is made by an independent committee appointed by the Educational Testing Service. Criteria for selection include academic record and school recommendation, scores of the SAT and three Achievement Tests, and other factors deemed appropriate by the selection committee such as school and community activities, evidence of leadership, and creativity expressed through a variety of avenues.

Applications are due December 1, 1980. For more information, application forms and Critical Date Schedules, contact the Office of Scientific Personnel, 40 Brookhaven Avenue, Ext. 3338.

Register For SCCC

Suffolk County Community College will again offer a number of courses on site during the fall semester. Friday, August 22, is registration day, and counselors will be at Berkner Hall. Tuition is $28 a credit (no additional school fees are assessed) and Master Charge and Visa are accepted. Tuition refund forms are available from the Personnel office. The courses to be offered, and information, may be obtained by calling Renee Flack on extension 3316.

Arrivals & Departures

Arrivals

John T. Benante	Accelerator
Jaime O. Chua	Energy & Env.
Patrick J. Coogan	Central Shops
Joseph A. D'Ambra	Accelerator
Donald L. Kazmark, Jr.	Accelerator
Vincent A. Mirizio, Jr.	Accelerator
Robert J. Piterniak	Accelerator
Maurizio Ribera D'Alcala	Energy & Env.
John F. Slavik	Accelerator
Warren G. Voegelin	Safety & Env. Prot.
Susan Monteleone	Nuclear Energy

Departures

Beverly E. Clark, Jr.	Nuclear Energy
David W. Grill	Energy & Env.
Kuo-Chih Hong	Energy & Env.
Jory A. Yarmoff	Chemistry

Retirees

Mort Rosen

Albert G. Holtz Paul Simack

Albert G. Holtz, a Technical Associate in the Dept. of Energy and Environment, will retire today. He has been at BNL since October 11, 1954. Now he will relax at his home in Bellport and get in a lot of fishing.

Paul Simack, a Nuclear Emulsion Specialist at Photography and Graphic Arts, will also retire today after nearly 33 years at the Lab. He does not plan to relocate, but will stay at his home in Manorville and work on his garden.

Addendum

Many people contributed to the successful development of Tristan at BNL, and we did not manage to cover everyone in last week's Bulletin story. Others who deserved special mention are Stanley Ulc, the engineer who designed shielding, designers Jud Diener and Ed Sperry, and technicians Bill Lenz, Jr. and Al Minn.

Right On Target

Last month the BNL Police Group held its first annual Police Shooting Tournament on site. "B" Squad captured the High Team Award with (from left) Capt. George Baer in first place, P.O. Richard Conklin, second, and P.O. Gail Lukas, third.

The pistol shoot consisted of both the "Bull's-eye" and "Combat" courses. The former course consists of firing at a fixed bull's-eye target from a distance of 75 feet. The latter is a silhouette target at which the shooters must aim five separate times, starting at a distance of 21 feet and increasing to 150 feet. They must fire 12 rounds in 25 seconds each time, for a total of 60 rounds on the course.

Trophies were also awarded to the highest shooter in the other squads: P.O. Richard Baulch ("A"), P.O. Patricia Cahill ("C"), and Capt. James Goode ("D").

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Published weekly
for the employees of
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Reports Available

The following reports are now available to the Laboratory Staff and to Affiliates of the DOE, AUI, and NRC. Others may purchase the reports 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 50994 $7.25
Annual Abstracts of the National Center for Analysis of Energy Systems. Department of Energy and Environment

BNL 51009 $5.25
"Rim Analysis" Statistical Techniques Applied to the Evaluation of the National Energy System by Multiple Criteria. Y. Draper, et al

NUREG/CR-1007
BNL-NUREG-51044
Evaluation of Selected Signal Processing Methods for the Characterization of Steam Generator Eddy Current Signals. S.D. Brown and D.T. Hayford

BNL 51057 $8.00
Data Report - Oceanographic Data from Moored Instrumentation Velocity, Temperature, and Salinity off Shinnecock, Long Island, in May 1977. T.S. Hopkins, et al

BNL 51068 $5.25
New Techniques for Analyzing Relationships Between Energy and Water Quality. E. Kaplan, et al

BNL 51070 $4.50
Hydrogen/Halogen Energy Storage System: Safety, Performance, and Cost Assessment. Final Report. P.M. Spaziante, et al

BNL 51076 $6.50
Physical Aspects of the U.S. Oil and Gas Systems. J. D Acierno, et al

BNL 51095 $4.50
The Time-Stepped Energy System Optimization Model (TESOM) Overview and Special Features. A.S. Kydes and J. Rabinowitz

BNL 51098 $14.50
Data Summary for Evaluation of the Transport and Diffusion Climatology of the United States East and Gulf Coasts. G.S. Raynor and J.V. Hayes

NUREG/CR-1126
BNL-NUREG-51101 $5.25
Properties of Radioactive Wastes and Waste Containers Progress Report No. 12, January - March 1979. P. Colombo and R.M. Neilson, Jr.

BNL 51103 $4.00
Beam-Beam Effects in Curvilinear Interaction Regions in ISABELLE. M. Cornacchia and G. Parzen

BNL 51109 $5.25
Compatibility of DOE Energy Data Bases with EEMIS Data Requirements. J. D'Acierno and A. Hermelee

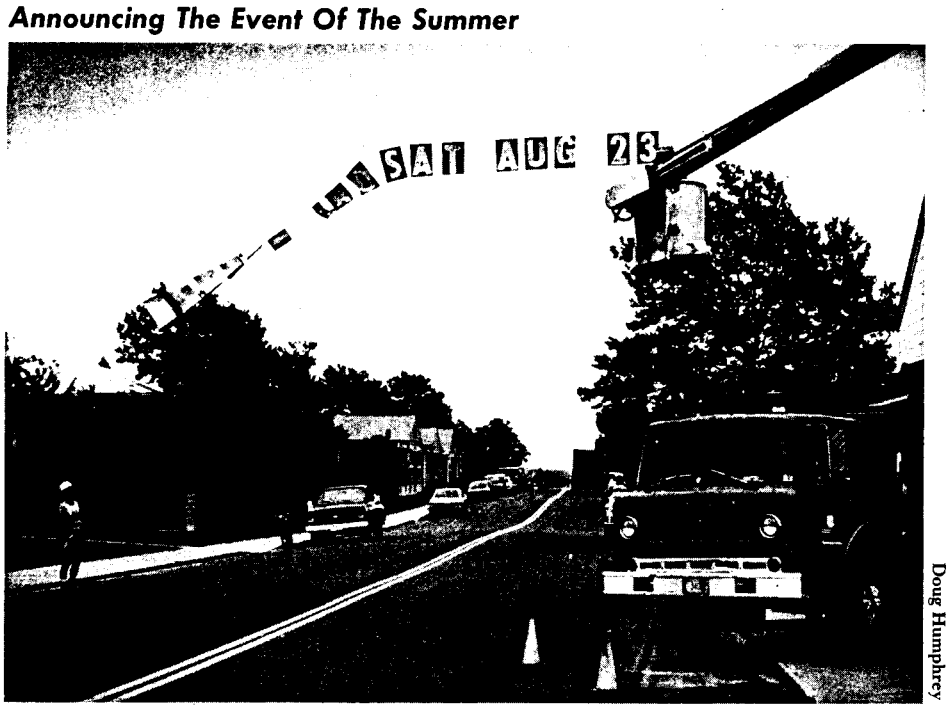
BNL 51111 $4.00
Data Report-Design Construction, and Initial Operation of the BNL-Coastal Transport and Diffusion, Air/Sea Interaction Research Buoy. D. Huszagh, et al

BNL 51112 $6.00
Economic Assessment of Using Nonmetallic Materials in the Direct Utilization of Geothermal Energy. Final Report. Burns & Roe Industrial Services Corporation

NUREG/CR-1167
BNL-NUREG-51113
Evaluation of Isotope Migration -Land Burial. Water Chemistry at Commercially Operated Low-Level Radioactive Waste Disposal Sites. Progress Report No. 11, October - December 1978. P. Colombo and A.J. Weiss

NUREG/CR-1168
BNL-NUREG-51114
Properties of Radioactive Wastes and Waste Containers. Progress Report No. 13, April - June 1979. P. Colombo and R.M. Neilson, Jr.

Announcing The Event Of The Summer



Doug Humphrey

The banner is up over Brookhaven Avenue! Saturday, August 23, should ring a bell in your mind. But don't wait until then to buy tickets to the employee picnic. Today is the your last chance. Get your tickets from department secretaries or receptionists.

Children's Program

Pool Special

Winners of the races held at the pool last Friday were:

Ages 4-6
1st - Neesha Sing
2nd - Kathleen Holden
3rd - Nicole Palmer

Ages 7-9
1st -Keith Holden
2nd - Alyse Holden
3rd - Noel Ehrenkaufer and Jennifer Frabizio

Ages 10 and older
1st - Maurisa Holden
2nd - Don Shea
3rd - Greg Holden

Coming Events:

This Friday - balloon and ping-pong races
Wednesday, August 27 at 2:00 p.m. Water Carnival for all kids over four.

On-Site Program

Festivities for the Halloween Party began with an elaborate display of costumes on parade. This was followed by games and contests and a special appearance of Darth Vader direct from outer space.

Coming Events:

Next Friday - Carnival Day

Again this year the staff of the Children's Recreation Program hosted an International Picnic for families residing on site. The event was a huge success featuring dining on foreign delicacies combined with good old U.S. favorites. The showing of a first-rate movie and the serving of dessert completed a happy evening.

Tennis Program

Tournament winners will be announced in next week's Brookhaven Bulletin.

Softball

League I

Blue Jays 24 - Six Pax 5
For the Blue Jays, Danny Oldham was 5 for 5, Tony Kossiakoff 3 for 3, Hank Strelicki 4 for 4, Larry Musso 3 for 4 with a home run. For the Six Pax, Ken Asselta and Brian Briscoe were 2 for 3 and Ralph Brown had a home run.

Source I 5 - Deegenerates 2
Source I scored all their runs in the first inning and the Deegenerates were unable to mount an offense. "Choo Choo" Flannigan had a home run for the Source.

Raves 21 - Phoubars 10

League II

Titans 11 - Dirty Sox 4
AMD 7 - Cardinals 4
Roga 9 - Moles 7

Makeup Games:
Titans 11 - Dirty Sox 3
Roga 4 - Moles 2

League III

Big Sticks 24 - Lights Out 9
Nuke Powers 9 - Brewmasters 5
Medical 7 - Binary Bombers 4
Huff & Puff 13 - Ice Pops 12

League IV

Balls & Strikes 12 - Thrids 5
Diamonds 8 - Turkeys 7
E-Z Riders 6 - Nads 5
Dennis Hall had two home runs and was responsible for 4 runs batted in. B-J Mingino knocked in the winning run. The E-Z Riders turned over two double plays and a triple play. Both teams played excellent ball - the game went into extra innings.

Survivors 8 - Random Sample 7

League V

No Feedback 11 - Who's On First 3
TNT 15 - Underalls 7
Mudville Sluggers 13 - Source III 5
Who Cares 9 - No Names 6

Makeup Game:
No Names 7 - Who Cares 6

What state celebrates its admission to the Union today?

Soccer

The annual New York Oldtimers Vs. BNL soccer match will be played at the Recreation Park on Saturday, August 16.

Cafeteria Menu

Week Ending August 22, 1980

Monday, August 18		
Corn chowder	(cup)	.45
	(bowl)	.55
Beef chop suey on rice		1.45
Apple pancakes & sausage		1.40
Hot Deli - Roasted turkey breast	(on bread)	1.45
	(on roll)	1.55
Tuesday, August 19		
Cream of tomato soup	(cup)	.45
	(bowl)	.55
Roast chicken w/stuffing & 1 veg.		1.50
Beef liver & onions & 1 veg.		1.40
Hot Deli - Bar-B-Qued beef	(on bread)	1.45
	(on roll)	1.55
Wednesday, August 20		
Beef noodle soup	(cup)	.40
	(bowl)	.50
Broiled filet of fish & 1 veg.		1.45
Salisbury steak & 1 veg.		1.45
Hot Deli - Grilled Reuben		1.45
Thursday, August 21		
Pork and cabbage soup	(cup)	.45
	(bowl)	.55
Manicotti & 1 veg.		1.40
Sauerbraten & potato pancake		1.50
Hot Deli - Smoked baked ham	(on bread)	1.45
	(on roll)	1.55
Friday, August 22		
Billy Bee soup	(cup)	.50
	(bowl)	.60
Spaghetti w/clam sauce & garlic bread		1.35
Breaded pork chop w/apple sauce & 1 veg.		1.55
Hot Deli - Fried filet hero		1.45

Sanchez Uses Push Power

Eduardo Sanchez is quick to say that he is not a hotshot skateboarder. He does it because he has too far to go by foot and not far enough by bike.

Sanchez commutes daily by skateboard between his dorm and the Chemistry building, where he works as a BNL summer student. "Most people keep a briefcase in their desks," he said. "I keep a skateboard in mine."

Doug Humphrey

Eduardo Sanchez on his way to work.

Even though he doesn't claim to be an expert, Sanchez is not new to skateboarding. It's how he gets around in Boston, where the one-and-a-half mile distance between home and Boston University is too far to walk, but not far enough to warrant the expense of a bicycle.

A senior this fall, Sanchez is majoring in biomedical engineering and chemistry. At BNL, he works with Richard Lambrecht in the Chemistry Department, developing an automated method to make technetium-92. This highly radioactive isotope is too hazardous to handle manually. Sanchez said that an automated process would make it possible to produce technetium-92 for use in brain scans.

When Sanchez is on his skateboard, he is easy to spot, even at a distance. He moves with a distinct push and glide rhythm that must be peculiar to serious skateboard commuters. For all the traveling he does, however, Sanchez uses what he calls an "el cheapo" model, which is narrower than trick skateboards. "It's mostly good for going in a straight line," he said. "I have a little trouble with corners."

Sanchez thinks he has a good thing going. "When I get to my destination," he said, "I just pick up my skateboard, tuck it under an arm, and take it with me. I never have to worry about where I've parked it or if I've locked it."

Classified Advertisements

Placement Notices

The Laboratory's placement policy is to select the best-qualified candidate for an available position, with consideration given to candidates in the following order of priority:(1) present employees within the department, with preference to those within the immediate work group; (2) present employees within the Laboratory as a whole; and (3) outside applicants.

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

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

Each week, the Personnel Office lists new personnel placement requisitions. The purpose of these listings is, first, to provide open placement information on all nonscientific staff positions; second, to give employees an opportunity to request consideration for themselves through Personnel; and, finally, for general recruiting purposes. Because of the priority preference policy stated above, each listing does not necessarily represent an opportunity for all candidates. As a guide to readers, the listings are grouped according to the anticipated area of recruitment, as indicated below. Except when operational needs require otherwise, positions will remain open for one week following publication date.

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

LABORATORY RECRUITMENT: Opportunity, for present Laboratory employees.

1434. SECRETARIAL POSITION - Requires excellent secretarial, administrative and communication skills. Will function as primary secretary for the Biomedical and Environmental Assessment Division, providing diversified secretarial assistance to their scientific and professional staff members. Department of Energy and Environment.

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

1435. SENIOR STANDARDS INSPECTOR - Requires significant experience in all phases of mechanical inspection especially optical tooling. Proficiency with use of inspection equipment and non-destructive testing equipment and a basic knowledge of metals, machining, welding, and sheet metal fabrication is essential. Will perform all phases of in-process and acceptance inspection of purchased and Laboratory fabricated parts and equipment. Central Shops Division.

1436. FACILITIES ENGINEER (Architectural Designer) - Requires BS or equivalent in architecture and experience performing a broad scope of architectural activities, including the preparation of preliminary sketches, working drawings, specifications, and estimates for commercial and industrial type buildings. Will be responsible for completing the architectural analyses, design, and prosecution of various projects on site. Plant Engineering Division.

1437. BOOKKEEPING/ACCOUNTING POSITIONS (two positions with Administrative Division of ISABELLE) - Requires good aptitude for working with numbers, in addition to clerical skills and background in a variety of accounting functions, including posting and verification, charges and billings in a computerized system. Accelerator Department.

Autos & Auto Supplies

67 BUICK - Wildcat, all power, new snows, excel cond, green, blk. int. & vinyl top. $675. or best offer. Theresa, Ext. 2913.

76 CHEVY - Blazer, 4 WD, 4 spd, new tires, HD-shocks, 43,000 mi, like new, must sell. 734-7584 after 6 pm.

71 CHEVY - Monte Carlo, a/c, am/fm, all extras, great car! $1,000. Ext. 2115 or 744-0146.

66 CHEVY - Wagon, great engine, good for hauling, shopping, $250. or best offer. Ext. 7799 or 271-5774.

70 MAVERICK - 3 spd, standard, high mi., runs good. $195. Bill, Ext. 3355 or 472-4684 after 6 pm & wkends.

78 CAMARO - 228, black, auto, loaded, excel running cond. $5,200. Jose, Ext. 3082 or 473-8350.

72 CHEVY - Nova, 6 cyl, 65,000 mi, good cond. Rana, Ext. 3080.

CAP - for pickup, insulated, slider, interior light, jalousies, boat- rack, excel. $300. Kurt, Ext. 4698 or 744-2907.

72 CHAMPION MOTOR HOME - 23', completely self contained, sleeps six, a/c, am/fm, excel running order. Donna, Ext. 2970 or 929-4237 after 6 pm.

SNOW TIRES - (2) GR78-14 radial flextens mounted on GM rims, $120. Roy, Ext. 4664 or 473-5890.

TIRES - (2) F78-15, brand new on Ford rims w/hubcaps. $50. Ext. 4709 or 281-4607.

75 VW RABBIT - 4 cyl, a/c, excel in & out, 27 MPG. $3,000. Gary, 661-6721.

74 DODGE DART - Sport model, 318-V8, p/s, p/b, a/c, a/t, high mi., good cond. orig. owner. $750. Bob, Ext. 3370.

70 HONDA Z50A - Mini bike, good running cond. $150. 744-3764.

66 MUSTANG - 6 cyl, 200 ci, auto, new brakes, exhaust system, starter, carburetor, solenoid, voltage regulator, interior restored, ext. good. $1,800. Saxon, 929-8105 or 929-4701.

68 CHEVY WAGON - runs, good transp., rust, V8-327, 3 spd auto, a/c, p/s, p/b, good tires. $265. Don, Ext. 3394 or 588-1367 after 6 pm.

67 VOLKS BEETLE - egine excel, body fair, clean inside, good transp. $500. 589-5490 eves.

MINIBIKE - Briggs & Statton, 3 HP, excel. $100. Jo, 475-8440.

72 CHEVY - Capice, Sta. wgn, p/s, p/b, new brakes/battery. $450. Len, Ext. 4487.

75 HONDA - CB360, red, mint cond, only 1300 miles, electric start, sissy bar w/full back pad, helmet included. $1,000. Ext. 2064.

HUBCAP - Cararo rallye, $5.00. Frank, Ext. 3898.

78 THUNDERBIRD - p/s, p/b, p/w, a/c, am radio, immac. cond. inside & out. 22,000 mi. $4,000. 286-0695.

69 FORD - Fairlane, 4 dr, sedan, a/t, p/s, p/b, 302 V8, am radio, new battery, running. $150. Dennis, Ext. 4259, 736-2534 after 6 pm.

73 DUSTER - 340, posi, auto, bucket seats, Hdrs, mags, 48,000 mi., needs paint. 821-0144 after 6 pm.

75 CHEVY - Malibu, 4 dr. a/t, a/c, good car, 90,000 mi. $2,000. 286-8517 after 5:45 pm.

77 YAMAHA - XS400, mags, disc brakes, 6 spd, 50 MPG. $950. Firm. Extras. Jerry, Ext. 3894.

68 BSA VICTOR - 441, good cond. $600. Murdock, Ext. 4731.

65 TRIUMPH - Spitfire, runs goods, many spare parts. $800. Dave, Ext. 7922.

78 HONDA - Cafe Motorcycle, racer, 100% chrome, 2 modified engines. $6,000. invested, best offer over $3,500. 928-0158 after 6 pm.

65 PONTIAC - Tempest, 326 cu. in. 4 dr, reliable transp. $200. Bill Stars, Ext. 4278 or 298-9648 eves.

79 PINTO - 3 dr. htch. bk, p/s, d/b radials, rust proofed, 4 spd, am/fm 8 trk, sunroof, very economical. $4,200. John, Ext. 4013 or 878-8783 after 6.

75 AUDI FOX - good cond, rebuilt eng, brown fawn interior. $2,500. Terry, 399-5873 or Yvonne, Ext. 7159.

76 HONDA - Civic, excel cond. $3,500 or best offer. Ext. 4881.

71 ARISTOCRAT TRAILER - gas/elec refrig, stove/oven, shower, toilet, sleeps 6, $2,100. 732-1913.

TIRES - (2) Delta Trans-Am, H60-15, new raised white letters, $65. Kevin, Ext. 4261 or 654-8553 after 6.

1979 Z-28 CAMARO - $5,800. Glenn, 473-1726 eves.

VW PARTS - Bumpers, doors, fenders, hoods, glass, etc. From 68-69. Augie, Ext. 4220.

Boats & Marine Supplies

17' CLAMBOAT - Garvey, 65 HP, Merc., w/controls, must sell, $600. Ext. 2062 or 286-8869.

20' SHARPIE CLAMBOAT - 1978 Mariner 48 HP outboard, low hrs, both excel. $1,500. 286-0534.

SUNFISH - excel cond. $550. 475-9294 weekdays.

6 HP BRITISH - Seagull outboard 1975 Silver Century, excel cond. $225. 724-2923.

17' SAILBOAT - explorer, fiberglass. $700. Ext. 4330.

17' SPORTCRAFT - 1969, 85 HP Evinrude w/1980 trailer; v.g. cond, extras, water ready. $1,700. 751-0522.

Miscellaneous

CHILD CAR SEAT - GM, brand new. $25. Kurt, Ext. 4116.

TIRES - (2) 13" pirelli fiber-belted radials, hardly used, $30/pr; 10 spd bike, "Chiorda" (Ital), 24", simplex de-railer, excel shape. Bob, Ext. 3565.

POOL - 15x30 oval w/sandfilter, many extras $250. Ext. 2022 or 654-0050.

STOVE - Wood burning air tight, very efficient, must see. $200. Ext. 4489 or 473-2821.

AVOCADO PLANT - 5½', $10; oxalis plants, $2. ea; Redwing Cookie jar, old $5. I. Merritt, 589-5126.

TICKET - (1) One-Way airplane ticket. N.Y. Amsterdam. $150. 751-2709.

POOL FILTER - Sears cartridge for small pool. 12' or smaller. $15. 581-7656.

FREEZER - Upright, 15' 9 cu ft., like new. $200. Firm. Tom, Ext. 2011 or 325-1913.

COUCH - foam cushions, $15; bean bag chair, needs repair, $4. Ext. 4045 or 289-5770 after 6.

RCA - cabinet & stereo, all wood, French Prov. Ext. 4189.

CANNING JARS - (glass top), quarts. Ext. 2907.

FREE DOG - "Benji", abandonned near our house; affectionate, loves children, excel watchdog. Muller, Ext. 3057 or 878-0357.

CONTEMP. SECTIONAL - 3 piece w/wood trim, almost new. Orig. $1,600. Sell. $600. 473-5063 after 6.

ITALIAN PROV - Fruitwood tables, (2) olive/gold brocade chairs w/gold sofa & matching chair. Ext. 2065.

PING PONG TABLE - ¾" particle board, fold-up, excellent cond. $50. Betty, Ext. 3755.

EXCERSIER - rowing type, $10; 2 McGraw & Edison Eskimo oscillating table fans, 3 spd, $15; 2 spd, $10. Pat, Ext. 2452.

MUSIC - piano (all levels), sheet & books, cheap. Stephanie, Ext. 3869 or 325-0389 after 6.

BED - Queen size w/frame, 6 mos. old. 242-6764 eves.

AIR COND - 20,000 BTU, 100.220V. Bill, 286-8554.

PACHYSANDRA PLANTS - Healthy & thriving, excel ground cover. 25 for $2. Laurie or Janice, 929-4522.

WINEMAKERS UNITE! - prepare for 1980 vintage. Grape purchase, for info call Tom, Ext. 4674 or 286-2505.

CHANDELIERS - several beautiful crystal & others; GE trash compactor, $75; desk & chair; rug, black, 10x20. Ext. 4532 or 277-4091.

RUG -12x18 oval braided, brown & tan tones. 475-4199.

BABY ITEMS - Biltrite carriage, $20; playpen, wood, $20; crib, wood, $20; all excell cond. Larry, Ext. 4295.

DINNETTE SET - China closet, buffet, 4 chairs, table w/2 leaves. $300. Ext.2423.

LAFAYETTE - Stereo, $25. Hank, Ext. 3894.

BEDROOM SET - double dresser, bureau, mirror, nightstand. $100. Roseann, Ext. 3199 or 475-6622 eves.

ROTOTILLER - 4 HP Hahn, 2 yrs. old, cost $340. 2' tines, gear driven, very good shape. $225. Firm. 325-1033.

DOUBLE BED - wooden head & foot boards w/mattress. $45. Ext. 4676.

LAWN MOWER - reel type. $60. Bob, Ext. 4672 or 929-4753.

BOOKS - Photography, Time/Life Series, complete set & index. $65. Fred, Ext. 4407.

ARC WELDER - 115 V, input 50 amp output w/hood. $45. Jerry, Ext. 2934 or 744-2816.

BANJO - 5 string, made in W. Germany, excel cond. w/case. $200. Firm. 399-4243 after 6.

STOVE - American made "Kombi" wood/coal, heats up to 2000 sq. ft. List $656. Factory price $499. Bob, Ext. 4551 or 289-2159.

SOFA - excel cond. $250; end tables; night tables; dressers; carpet 15'x12', bright orange. Usha, Ext. 3922 or 924-6720.

TRICYCLE - $7. 727-5912.

FULL CORD WOOD - cut & split, small for stove, some pine. $150. Chris, Ext. 4612 or 281-7379.

CANNING JARS - (glass top) quarts. $2.40/doz. Walter, Ext. 3397.

DRYER - Portable Whirlpool, 12 lb., gold, excel cond, 3 cycle. $100. Ext. 4444.

TV - 21" B&W Magnavox, sm. console, $10; fish tank w/accessories, $8; folding closet doors w/track. $10. Morris, Ext. 4188.

FURNITURE - French goldleaf, L shaped cocktail table, occasional table, mirrors, lamps. Otto, Ext. 4933 or 331-1907.

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

NORTH SHIRLEY - 2 mi. from Lab, 5 yrs. old, 3 bdrm ranch, ½ acre, fenced backyard, wood burning stove, full bsmt, dishwasher, refrig, washer/dryer, storms & screens. $34,000. Joe, Ext. 3498 or 744-1255.

WADING RIVER - 3 bdrm hi-ranch, 1 acre, Sh-W.R. School Dist., low taxes, mortgage assumable at 8½%. 929-8653.

MASTIC BEACH - 3 bdrm ranch, corner lot, roofed patio. Pleasant location near water. Low 30's. 281-7531.

WADING RIVER - Property for Sale, No. of 25A, exclusive area, lovely wooded building plot, slightly under two acres. Owner asking $18,000. 928-0158 NO BROKERS.

MASTIC BEACH - 3 bdrm, panelled L/R w/new w/w carpet, eik, outdoor & indoor front porches, complete insulation, elec. heat, new asphalt driveway, ¼ acre, tree house, taxes $550. $25,000. Chris, 281-7379.

SHOREHAM - large 4 bdrms, 2½ bath colonial, wooded ⅓ acre lot on quiet street near Miller Ave. School, no. of 25A, 2 car garage, eik, fam. rm. $68, 000. 744-4787.

PATCHOGUE EAST - 2 bdrm, alum. sliding, fenced, full bsmt, assumable 8% mortgage. $27,500. 289-8212 or Ext. 4514.

PATCHOGUE - House w/3 apt., near bay, park, swimming pool & tennis courts. 1 mi. form village of Patchogue. $46,000. 475-3632.

For Rent

YAPHANK - German Gardens, sm. bungalow, ideal for single. $190/mo. incl. elec. & hot water. 924-3946.

SHIRLEY - 4 bdrm house, 2 baths, cellar, garage, near bridge & bay, available 2nd wk. August. $350/mo. J. Carroll, Ext. 3284.

MASTIC PARK - Cottage, 2 bdrms, 10 min. from Lab. $220/mo. plus util. Security. Refrences. 281-7844.

ROCKY POINT - 10 min. from Lab. 3 rm w/full bsmt, furnished if wanted, priv. entry home, rent from Sept. until June. Ann, 744-6012.

PATCHOGUE - 2 bdrm apt., 325/mo. heat incl; 1 bdrm apt. $210./mo. heat incl. 370 So. Ocean Ave. 475-5031.

YAPHANK - 3 bdrm apt. in 2 family house, walk to lake, 10 min. from Lab, $325/mo. incl. heat. 924-4447.

RONKONKOMA - ranch, 2 bdrm, extra lg. kit, L/R, D/R, Florida rm, full bsmt, att. garage, wood stove, ½ acre, near LIE & Vets Highway. $325/mo. plus util. Ext. 2964.

POCONOS - Chalet. Plan a fall vacation now! Tennis, Hiking, "Bobsled" run nearby. Rent by week or weekend. 289-2159 after 6.

STONY BROOK - studio apt. unfurn, priv. ent, parking space, $275./mo. util. incl. one yr. lease & security deposit required, single occupancy only. 751-3889 or 345-4044.

WADING RIVER - Cliff house w/Panaramic waterview, stone fp, sleeping loft & bdrm, D/W, wash/dry, $325./mo. plus util. Sept.-June. 929-8165 or Ext. 2440.

SOUND BEACH - 2 bdrm house, priv. beach rights, near water. $300/mo. 821-9296.

STONY BROOK - Strathmore S., cul-de-sac, 4 bdrm, den, 2½ bath, L/R, D/R, kit, 1 car garage, 12 month lease available. $550/mo. plus util. 751-0522 or Ext. 2840.

BAITING HOLLOW - waterfront house, sublet available, Dec. 10, 1980 to May 30, 1981. 2 bdrm, study, 2 baths. Ext. 3421.

CORAM - Pinewood apt., studio apt., a/c, $298/mo. heat & gas incl, large closet space, parking space, security deposit required. 732-0160 or 345-3638.

WADING RIVER - historic 3 bedrm house, 2 baths, fp. $395./mo. NO BROKERS. Call 929-4068 or collect 212-348-7958.

Wanted

PERSONS - interested in buying coal in bulk from 2 to 4 tons. Making coal pool list. Bill Sanchez, Ext. 3848 or 698-3145.

CUB SCOUT UNIFORM - shirt, any size/cond, need left front panel. Dennis, Ext. 4259 or 736-2534 after 6 pm.

HOUSE - or apt., 2 bdrms, no. of LIE, between exits 39 & 49. Oct. 1, 1980 and on. Ext. 2115 or 744-0146.

HOUSEMATE - to share 2 bdrm house in Medford, $150/mo. & share util. w/washer & dryer. Warren, Ext. 3464 or 924-7552.

GOOD HOME - for Brandy, part German Shepherd and Doberman, 3 yrs. old, needs home female, spayed, housebroken. 929-6905.

GO CART - with or w/o engine; or minibike under $100. Tom, 325-1033.

HOUSEMATE - to share lg. house in Coram, own bedroom & bathrm, $155/mo. ⅓ util. 928-8579 or Ext. 2521.

DEHUMIDIFIER - working cond, reasonable. Ext. 7110.

JON BOAT - aluminum 11½', good cond. only. Ext. 2415.

CHILD'S ROCKING HORSE - in good working cond. Debby, 472-4196.

CAR - 4 or 6 cyl, mech. good, auto, 70 to '73, reasonable. Jim, Ext. 2050 or 744-3792.

122 VOLVO - front end parts, grill & hood. Frank, Ext. 3898.

HOT DOG PERSON - must be reliable, every Wed. for Moles S.B. Team. Inquire. Ext. 4963.

ROOMMATE - to share expenses of an apt. in the Coram area. Nancy, 744-5583 or 475-1154.

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

SCUBA GEAR - 80 cu. ft. tank; B.C.; wt. belt; mits; hood; boots; regulator. R. Dietz, Ext. 3059 or 744-7242.

AIDE - for older person from 8-12 am &/or 5-9 pm. Mon-Fri. and/or Sat. & Sun. light housekeeping. Port Jeff. Good pay. Ext. 3414.

PLATFORM BED - full size. Donna, Ext. 2926 eves, days, 744-8063.

Car Pools

VANPOOL - from Miller Pl., Sound Beach, Rky. Pt., to BNL. Don, Ext. 3284.

EAST ISLIP - 3 man car pool, desires other riders/drivers. Ext. 4532.

NORTHPORT AREA - 25A & Laurel Ave., Wish to share driving with one or two others. Ext. 2415.

BELLPORT - anyone interested in joining existing 3 man car pool? George, Ext. 7654.

MASSAPEQUA VICINITY - driver needed. Plotkin, Ext. 4717.

Lost & Found

LOST - Key ring w/keys & pocket knife. Ext. 4514 or 289-8212.

Services

CLEANING - home, apt., office. For FREE estimate. 751-2350.

FIRESIDE CHIMNEY SWEEPS - f/p, stove, chimneys, protect against chimney fires, insured. Lab employee discount. 584-6425.

HOUSE CLEANING - professional results, reasonable rates. References. 821-9508.

ASPHALT - Paving & sealing. Bob, 475-4382.

AUTO BODY - repairs & refinishing. Small car discounts. Bob, Ext. 2546 or 744-4047.

PICKUPS - Moving and/or deliveries. Bob, 764-7453.

SHARPENING SERVICE - hand, circular & chain saws, scissors, mower blades, etc. Marie, Ext. 2265 or Joe 732-3286.

CARPETS INSTALLED - repaired, quick dependable service. Free estimates. Jim, 821-0187.

CERTIFIED TEACHER - will tutor or babysit, off-site before 5:00; on-site anytime. Kim, Ext. 3656.

NEW & USED TIRES - repairs, service. Lunchtime, Fred Usack, Ext. 4798.

PIANO TUNING - and repair, reasonable rates and conscientious service. 751-4985.

MOVING - pickups & deliveries. Bob, 764-7453 after 6 pm.

WOMENS EXERCISE CLASSES - South Shore, $1.50 per class. Given in the privacy of my home. 325-1033.

AUTO BODY REFINISHING - repairs & painting, sm. car discounts. Bob, Ext. 2546 or 744-4047.