BROOKHAVEN BULLETIN
Vol. 40 - No. 31 August 8, 1986
BROOKHAVEN NATIONAL LABORATORY

Peter Horton

Judith Bostock, Budget Examiner for the Energy and Science Division of the Office of Management and Budget, visited BNL last Thursday and Friday. During her stay she talked to Richard Setlow, Associate Director for Life Sciences (left) about programs under his direction. She toured the AGS, the HFBR, and the Tandem Van de Graaff. She also discussed the status of current facilities and future projects with BNL staff members.

Peter Horton

Last week the chancellor and dean of New York University visited BNL for a tour of our facilities and an overview of our research. (From left) Chancellor L. Jay Oliva and Dean C. Duncan Rice listen to Alfred Wolf, Chairman of the Chemistry Department, describe the function of the PETT VI, the latest model of positron emission transaxial tomographs. BNL is currently collaborating with NYU on a PETT study concerning mental illness. The NYU visitors toured the NSLS, HFBR and the AGS.

The Anatomy of a Fire

A lit candle caused the March 1985 fire at Browns Ferry Nuclear Power Plant, near Decatur, Alabama. A workman, using the candle to check for leaky seals surrounding electrical cables, accidentally set one on fire. Though the initiating fire was small, 1,600 electrical cables were damaged, and the loss of electrical power and control circuits hindered the normal cooling of the reactor core.

Enough safety equipment remained operational to safely shut down the reactor and maintain a stable core. Therefore, radioactive material was not released, and the reactor core was not damaged. However, that fire resulted in the Nuclear Regulatory Commission (NRC) issuing stricter fire protection guidelines and requirements.

Licensees of operating nuclear power plants must either comply with these new fire protection requirements, or they must show that the existing designs, plant configurations, administrative controls and fire-protection features meet the intent of these stricter requirements.

To assist the NRC in assessing the utilities' exemption requests, Mechanical Engineer John Boccio, head of the Reliability & Physical Analysis Group in the Department of Nuclear Energy (DNE), and Nuclear Engineer John Usher, DNE, helped developed a computer code named SAFFIRE, Safety Analysis For FIRE. It is a multi-dimensional, multi-component program that can assess fire protection within nuclear power plants by looking at fire propagation within their complex enclosures.

"SAFFIRE can mock up any enclosure we want to study," says Boccio. The program is supplied with the location of an initial fire, the rate it releases energy, the plant's geometry, its ventilation rates and the location of solid combustible materials. The code then calculates how the fire's energy redistributes itself within the plant.

The program is based upon the principle of field modeling. By dividing the power plant into many small volumes, the conservation of mass, momentum and energy during a fire in that enclosure can be solved numerically. Among others, chemical kinetics routines can be put into the program to analyze the subsequent burning of incomplete combustion products.

Their program can also analyze movement of the fire along electrical cables, taking into account radiative, conductive and convective heat-transfer mechanisms.

The code came about after a review team headed by Nuclear Engineer Robert Hall, head of the Engineering Technology Division, DNE, examined over two dozen exemption requests. Boccio, Usher and Mechanical Engineer Charles Ruger realized that the so-called zone models used by licensees were inadequate to analyze a fire propagating within a complex nuclear power plant enclosure.

"The zone-model approach gives realistic answers when looking at fires within small enclosures, such as residential or office rooms," explains Boccio. "It is not adequate for modeling fire behavior within the complex interior of a nuclear power plant."

SAFFIRE's predictions of the likely progression of fires within nuclear power plants have been tested. Using results from fires deliberately set in mock enclosures by Sandia National Laboratories and the Factory Mutual Research Corporation for the NRC, the program's predictions matched the observed fire phenomena.

(Continued on page 2)

Students Sum Up Summer Research

Summer is the time for sun and strawberries. At BNL it's the time when 57 college students have the opportunity to do scientific research rather than just study it. Here is a sampling of the work that students have done this summer.

Waylon Collins, who is a senior meteorology major at Texas A&M, is performing weather analysis and forecasting in the Department of Applied Science. He examines weather charts from satellite maps, which indicate patterns of wind flow, moisture and thermal distribution, and storm systems for different atmospheric levels. He also gathers information from a computerized network of weather stations in the northeastern U.S.

Based on his previous experience and with the guidance of his advisor, Paul Michael, Collins makes weather forecasts for the Lab area. By analyzing the weather patterns that appear after he has made his predictions, he is learning more about prediction and the evolution of weather systems.

In addition to his work on weather prediction, Collins has just completed a quality assurance report on instrumentation used in acid rain studies. He is also involved in the mass production of special collecting devices for acid rain experiments. In his career, Collins hopes to develop more accurate short- and long-term weather forecasting.

In his second summer at Brookhaven, **David Gerdes** is working with advisors Sidney Kahana and Ulrich Heinz, studying the properties of neutron stars. Highly condensed objects that form in supernova explosions, the stars have densities of 10^{14} grams per cubic centimeter, which is equivalent to a billion tons per teaspoonful of matter. He is trying to determine how matter behaves at such high densities.

To model neutron stars, Gerdes, a graduate of Carleton College, wrote a computer program that solves a system of six equations. These equations describe the mass, pressure and density at different points in the star. He then compares those properties with astrophysical data. From such an evaluation, he can develop more accurate equations of state and approximate the nature of neutron stars more closely.

After the summer program, Gerdes is going to spend one year in England, studying astrophysics and high energy physics at Cambridge University. He is planning to begin his Ph.D. in physics the following year at Berkeley.

A senior at Rochester Institute of Technology, **Josephine McAuliffe** works with her advisor Daniel Benz in the Medical Department. She has been participating in a study on effects of plastic implants upon drug action. Cells from mice are placed within small plastic chambers, which are then implanted into other mice. After injecting the mice with drugs, the group can examine their effect on those implanted cells. They are also studying how the plastic implants themselves affect mice's immunologic response to the drugs they receive.

When McAuliffe recovers the cells from the chambers, she places the DNA of the cells on slides. Through differential staining, she identifies the exchange of genetic material, which is indicative of damage to the DNA.

Eventually, McAuliffe plans to get a Ph.D. in human genetics and use her training to treat genetic diseases. Commenting on the BNL summer program, she said, "I feel very fortunate to be involved in this program. It is an incredible opportunity. I am sure it will help me significantly in the future."

David Kortenkamp came to BNL directly from France, where he spent a year studying robotics. In Applied Math, he is helping his advisor, Joseph Pasciak, develop a new programming language. They are modifying an already existing language called WEB, which uses PASCAL, to accommodate FORTRAN. The substitution will enable the program to perform numerical analysis more quickly.

Another novel design of the program allows you to write the documentation, or user's guide, as you write the program itself. This feature makes it easier to design the program. It will also make the program more understandable to other users.

When he leaves BNL, Kortenkamp will return to the University of Minnesota to complete his studies in math and computer science. After his senior year, he plans to begin work toward a Ph.D. He is interested in pursuing a career that combines interests in artificial intelligence and space technology.

As the summer program draws to a close and the students head back to school, they will remember working with some of the most advanced scientific equipment of its kind and interacting with some of the top researchers in their fields.

— Howard Rubin

Mort Rosen

The 10th BERA Members Art Exhibit opened on Monday, August 4, in Room B, Berkner Hall. Forty-two art exhibits contributed by 16 BERA members, include sculptures and pictures. Pictures range from watercolors to drawings, from oils to mixed media. The exhibit will run until Wednesday, August 13, and the viewing hours are from 11:30 a.m. to 1:30 p.m. weekdays.

Inside Info

It was announced last week that **Myron Strongin** and **Peter Bond** have been appointed Associate Chairmen in the Physics Department. Strongin, a senior physicist, has been with the Lab since November 1963 and for the last year has assumed the major role in the administration of the solid state program. Bond, a physicist, has been associated with the Physics Department since September 1972. He was active in the Tandem Group and, more recently, in the area of heavy ion reactions, particularly those involving nuclear transfer. Physics Department Chairman Arthur Schwarzschild says that they will assist in all aspects of department administration.

Ella McLean, senior Photography & Graphic Arts specialist, was recently honored for her lifelong community service at a testimonial dinner sponsored by the A.M.E. Zion Church of Patchogue. She received four proclamations, one from the Village of Patchogue, Brookhaven Town, Suffolk County and the presiding officer of the Suffolk County Legislature, Gregory Blass. They all declared July 26, the day of the dinner, as Ella B. McLean day.

Among other achievements, McLean is a charter member of the Patchogue branch of the NAACP, has volunteered for more than 25 years at Brookhaven Memorial Hospital in East Patchogue, and has served as president of the South Suffolk Scouting Council, after working for years with both the Boy Scouts and the Girl Scouts. At her church, McLean has served on the board of trustees for 37 years, and is the organist and senior choir director.

She has been employed at the Lab for more than 20 years. She and her husband Lowell, a BNL retiree, have resided in Patchogue since 1947.

Cool It!

About 50 buildings on site are serviced by central air handling systems with zone timers that automatically turn off the cooling at 5 p.m. That's fine, as far as it goes. However, when people work overtime, they will turn up the air conditioning again for the length of the timer — six hours.

Plant Engineering records indicate that there is a drop in overall usage, by 11 p.m., of 1-2 million watts each work-day night. This would seem to mean that the air conditioning is automatically running for six hours after 5 p.m. in zone controlled buildings. But how many people are still working at 11 p.m.?

To remedy the situation, it has been suggested that six-hour timers be replaced by one-hour timers. Plant Engineering is reluctant to take this action as it does not, for instance, want to interfere with experiments by requiring researchers to check the air conditioning every hour.

However, this extra evening usage costs energy and dollars. It would help considerably if, before leaving a zone, those working late would check the premises and turn off the timer if they are the last to go. Great strides have been made in energy conservation in the last decade, and most employees are aware that it is not something that will just go away. It is a continuing program.

In Memoriam

Donald T. Schuette, Laboratory Custodian, Plant Engineering, died on July 31. He was 28 years old. Schuette had been employed at BNL since June 4, 1979. He was a resident of Ridge. He is survived by his father, George Schuette, a retired employee and by his stepmother, Charlotte Schuette, a former Lab employee, both of Lockwood, New York.

George J. Hummer, Sr. Technical Associate at the National Synchrotron Light Source, died on August 1 after a long illness at the age of 55 years. He joined the Lab on January 5, 1959 and was a member of the Physics Department until he transferred to the NSLS in 1982. He is survived by his wife Fay, a daughter Sandra and son Kenneth, all of Medford; a daughter Pamela Klarman, East Patchogue and a son George Jr., of Shirley.

Dowling College on Site

Dowling College will be offering courses on site, beginning with the fall 1986 semester. Those employees who have completed their AAS degrees at Suffolk County Community College (SCCC), or have taken courses at other accredited academic institutions, can now look forward to pursuing their bachelor's degree with the convenience of taking some courses on site. Dowling has a transfer credit agreement with SCCC that will enable students to transfer much of their SCCC course work to Dowling. Therefore, the courses that Dowling offers will typically be fourth or fifth semester courses.

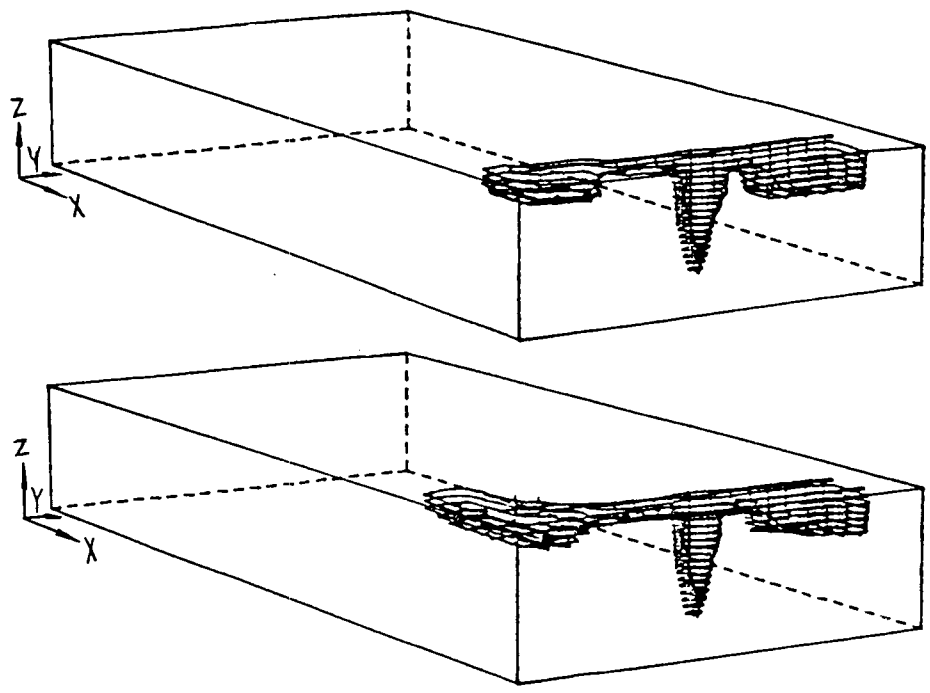
Dowling's offer of reduced tuition (1/3 off) to BNL employees still applies, as does the Lab's tuition refund policy.

A memo has been distributed to all employees detailing the course offerings for the fall 1986 semester. Our ability to offer one or more Dowling courses will depend upon enrollment. Registration will be held on Thursday, August 14 and Wednesday, August 20, from 11:00 a.m. until 2:00 p.m. A registration desk will be set up outside the cafeteria in Berkner Hall on both dates. Dowling Admissions staff will be on hand to process registrations and to provide academic advisement. Transfer students from SCCC or other accredited academic institutions are requested to bring a copy of their unofficial transcript to registration. Please direct any questions you may have to either Mary White, Ext. 7994 or Pat Knisely, Ext. 7631.

Suffolk County Community College

Fall 1986 — Course Offerings

Course	Cr.	Day	Hours	Start Date
CM11 - Introduction to Computing	3	M/W	5:15-7:05	9/8/86
BD57 - Marketing	3	T	5:15-8:15	9/9/86
AC11 - Principles of Accounting I	4	T/Th	5:15-7:05	9/9/86
BA29 - Supervision: Concepts and Practices	3	W	5:15-8:15	9/10/86
MA23 - Statistics I	3	Th	5:15-8:15	9/11/86



Boccio and Usher have investigated typical fires in nuclear power plant control rooms. This graphic represents the spread of hot gas throughout the control room of the LaSalle Nuclear Power Plant, Illinois, at two and six minutes after the start of a fire. As the fire progresses, the gases on the left are spreading out further and the temperature of the gases on the right is increasing. The tornado-like object is the fire plume.

Fire

(Cont'd)

The two engineers are considering expanding their code so that it will be able to assess the migration of smoke; they want to determine how long nuclear power plant operators can remain in control rooms before being affected by the smoke. "Knowing smoke-release rates would help the NRC to decide how much time an operator has to perform his duties before he has to switch control to a remote location," explains Boccio.

He and his collaborator would also like to have their program look at the effectiveness of automatic sprinkler systems and gaseous suppression systems within nuclear power plants. As well, they plan on expanding SAFFIRE further to include secondary fires caused by the burning of gases and aerosols liberated by incomplete combustion of the initial source of the fire.

"The intent of this fire-modeling project is not to advance the state of fire science, but rather to adapt present fire models to simulate nuclear power plant enclosures," says Boccio. "Our ultimate goal is to replace the overly conservative zone models with a much more realistic field model — that can be applied quickly and inexpensively to determine fire characteristics within a nuclear power plant environment." — Marsha Belford

Mort Rosen

(From left) Charles Ruger, Robert Hall and John Boccio watch as John Usher runs SAFFIRE.

It's a Bird . . . It's a Plane . . . It's an Ultralight!

Erwin Rodger aloft in his ultralight, Cloud Dancer.

Watching him take off, I'm reminded of the old movies of men in their early flying machines. But what a difference 80-odd years make! Those early pilots couldn't do what he can.

Erwin Rodger, a mechanical engineer in the AGS Department, is deftly maneuvering his flying machine above the ballfield, doing tight circles over the trees for the benefit of the photographer below. He's flying an ultralight.

If you've never seen one before, an ultralight is a cross between a hang glider and a light airplane. In recent years, ultralights have become more common, and here on Long Island, particularly on the East End, cruising over the beaches is a popular pastime.

When beachgoers chance to see Rodger's ultralight, however, they are seeing a one-of-a-kind machine. Rodger designed and built the craft himself. He even has a patent pending on the wing design, a batten/rib combination that makes the machine uniquely portable.

Rodger became interested in ultralights by way of hang gliders. He had always wanted to fly and one year made his own hang glider. "I used to have dreams about flying, and as soon as I started hang gliding, the dreams disappeared," he says.

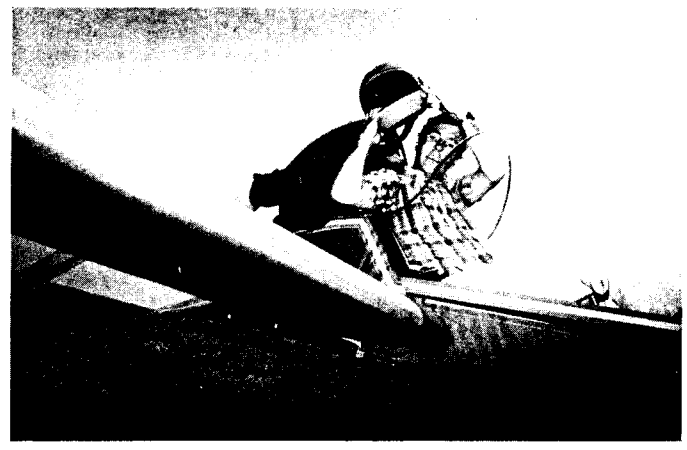
His homemade aircraft, though, didn't perform the way he thought it should, so when he heard about a group that went hang gliding off the cliffs at Mattituck, he set out one day to see their gliders.

He liked what he saw, bought a new hang glider and enjoyed the sport for the next six or seven years. What he didn't like, though, were the times he lugged his gear out only to find the conditions not right. Finally, he started experimenting with putting a motor on his glider, which would increase his flying time.

After four-and-a-half years of "getting the bugs out," he perfected a unique design that combines the aerodynamic advantage of a rigid-wing airplane with the portability of a hang glider. In addition, his design is such that in the right wind conditions, he can turn off the engine and soar. "This may be the highest performance ultralight in the world now," says Rodger, who has been flying his machine for five years.

His ultralight has a 15 to 1 glide ratio (15 feet forward for every foot drop in altitude) compared to a typical glide ratio of 6 to 1 for most other ultralights. In still air, with gas tanks full at five gallons, he has a range of 300 miles.

Although one doesn't need a license to fly an ultralight, FAA regulations apply to the machine. The rules specify maximum weight (including parachute) at 278 pounds, a limit of five gallons of gas, a straight and level top speed not to exceed 63 miles an hour, and a stall speed (minimum flight speed) of no more than 27 miles an hour. Visual flying rules apply; no night flying allowed. Also, no passengers are permitted (except in two-seater trainers), and the machines cannot be rented.



After making a landing, Rodger is about to climb out of his ultralight. To do so, he opens the cockpit shield, which is made of flexible plastic held in place with velcro. When in flight, Rodger wears a motorcycle helmet equipped with a two-way radio for talking to his flying companions.

Rodger transports his ultralight on top of his compact car. It breaks down into three basic units — two 19-foot wings, which disassemble and fold into bags, and the fuselage, or main body of the plane. Starting with the pieces all on the ground, assembly time is only eight minutes. —photos by Rosen

What the regulations don't specify is shape, says Rodger. Hence, the designs vary tremendously — from hang gliders, to biplanes, helicopters and balloons. He sees, however, a gradual trend in this country away from hang gliders to something that more resembles an airplane.

The regulations also don't require a parachute on board, but Rodger says few fly without one anymore. And with such devices on board, the safety record of ultralights is now comparable to light planes.

Rodger carries a ballistic parachute, mounted just above his seat. Deployed by an explosive charge, it takes one-and-a-half seconds to open. He released it once by accident, and both pilot and flying machine came down safely together.

By definition, an ultralight is a one-seater. But Rodger rarely flies without company. He belongs to the Long Island Hang Gliding Association, of which eight members have converted their hang gliders into ultralights. Together, they fly over Fire Island, often on the north shore at Mattituck, and occasionally out to Shelter Island. They can talk in flight via two-way radios attached to the motorcycle helmets they wear.

"I like the freedom of flying," Rodger says. "On the north shore, when the wind is out of the northwest, I can go up, shut the engine off, and soar with the hawks and ospreys for mile after mile over some of the most beautiful scenery." — Mona S. Rowe

Arrivals & Departures

Arrivals

Peter R. Cameron ..... Accel.
Yasuo Miake ..... Physics

Departures

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

Linda E. Ducoing ..... DNE

Social Club

Membership is still open for the Social Club. For information on trips, activities and a membership form contact Doris Terry, Ext. 2228, Bldg. 197C. Plans are being made for a road rally in the fall and anyone who can give pointers on setting up a road rally, please call Doris.

BROOKHAVEN BULLETIN

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Cafeteria Menu

Week of August 11

Monday, August 11

Cream of chicken soup	(cup)	.65
	(bowl)	.85
Braised Swiss steak jardinière w/one veg.		2.45
Hot vegetable plate (lite weight)		2.25
Southern fried chicken w/one veg.		2.55
Hot Deli: BBQ beef on onion roll		$2.45

Tuesday, August 12

Lentil soup	(cup)	.65
	(bowl)	.85
Pot roast of beef w/potato pancake		2.45
Buffalo breast w/one veg.		2.55
Yogurt & fruit plate (lite weight)		2.25
Hot Deli: Pastrami	(bread)	2.35
	(roll)	2.50

Wednesday, August 13

French onion soup w/croutons	(cup)	.65
	(bowl)	.85
Seafood quiche w/one veg. (lite weight)		2.45
Roast loin of pork w/one veg.		2.45
Chicken chow mein w/rice & noodles		2.45
Hot Deli: Roast beef garden club		2.50

Thursday, August 14

Beef noodle soup	(cup)	.65
	(bowl)	.85
Spaghetti & meatballs w/garlic bread (all you can eat) no take outs		2.95
Fresh carved ham w/one veg.		2.45
Egg salad and fruit plate (lite weight)		2.25
Hot Deli: Monte Cristo sandwich		2.50

Friday, August 15

Manhattan clam chowder	(cup)	.65
	(bowl)	.85
Broiled fresh fish w/one veg. (lite weight)		2.65
French bread pizza w/sausage topping		2.25
Hot vegetable plate (lite weight)		2.25
Hot Deli: Grilled Reuben sandwich		2.45

Mort Rosen

BNL's annual summer Sunday tours are drawing to a close this month. You have until August 24 to take your family and friends on a Lab tour, which includes a slide show in Berkner Hall, a walking tour of the Exhibit Center (where you'll find the "optricks" exhibit shown above) and a special visit to the energy-efficient Danish House. Hours are 10 a.m. to 3 p.m., and the tours are free, no reservations required. Children are welcome.

Classified Advertisements

Placement Notices

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

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

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

For further information regarding a placement listing, contact the Employment Manager, Ext. 2882.

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

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside applicants.

2471. ENGINEERING POSITION - Requires BS in mechanical or electrical engineering (MS preferred) and a minimum of 10 years' experience in the design, test and operation of power plants, to include 5 years' experience with nuclear plants. Knowledge of plant systems and equipment test and maintenance; current commercial nuclear power plant design and operational problems is essential. Department of Nuclear Energy.

2472. EXPERIMENTAL MACHINIST (3 positions) - Requires a minimum of five years' prototype experience in all-around machining, proficiency in job print interpretation, layout and machine set-up. Demonstrated ability and imagination in all phases of machine work is essential. Central Shops Division.

2473. STANDARDS INSPECTOR - Requires AAS in mechanical technology or equivalent capabilities including basic knowledge of metals, machining, welding and sheet metal fabrication. Assists senior standards inspectors with complex inspection and nondestructive testing. Performs small tool calibration and repair. Maintains laboratory measuring and inspection equipment inventory. May perform other inspection and section functions as required. Central Shops Division.

Autos & Auto Supplies

80 DATSUN - 200SX hatch, 5 spd., p/s, p/b, am/fm stereo, 64k mi., asking $2,995. Greg, Ext. 7960 or 289-6049.

75 VOLKSWAGON BUG - 76k mi., many new parts, good cond., must sell. $600. Ext. 7559.

76 FORD GRANADA - 4 dr. sedan, am/fm stereo, 6 cyl., runs well, 65k mi. $650. Ext. 7136 or 661-9155 after 6 p.m.

67 CHRYSLER CONVERTIBLE - p/s, p/b, p/w, a/t, 383-V8, new top, new seats. Tony, 698-9274.

79 DODGE CHALLENGER - 4 cyl., 5 spd., a/c, am/fm stereo, good cond. $800. Steve, Ext. 3822 or 929-6527.

70 PONTIAC - runs well. $150. Ext. 4597 or 878-1255.

69 PLYMOUTH - 318 std., 4 dr., engine, interior, good body, fair. $350. Bill, Ext. 4988 or 698-4882 after 6 p.m.

86 TOWN & COUNTRY STATION WAGON -mint cond. in and out. 477-2262 after 6 p.m.

73 VOLKSWAGON SQUAREBACK - std., new muffler, alt., and battery, reliable. $650. Ext. 4463 or 751-2422.

78 FORD FAIRMONT - p/s, p/b, 3 spd., 100k mi., $1,500. Ramesh, Ext. 4805 or 925-8113 eves.

76 BUICK REGAL - some rust, needs exhaust system, runs well. $200. Mike, Ext. 7625 or 924-0341.

82 CHEVY S.W. - very good V6, a/c. $3,500 firm; 78 CADILLAC FLEETWOOD BRINGHAM, like new, $3,500; 2 TIRES, 875-16-5 Good Year Tracker II, one $40. others free. 475-4596.

74 TOYOTA CORONA - 2 dr., 4 cyl., am/fm stereo, 96k mi., runs well. $650. Ext. 2110.

77 PONTIAC BONNEVILLE - 4 dr., power windows & seats, cruise control. $2,000, orig. owner. Judy, Ext. 5263 or 821-3290 eves.

72 OLDS CUTLASS SUPREME - very good running cond. $650. or best offer, 924-0582 eves.

TIRES & RIMS - P205/75 R15 M&S, Firestone Supreme on Chevy Rally Rims, 80k mi., set of four. $200. 727-2861.

COACHMAN CAMPER - for pickup, 9½ foot, shower, stove, hot water heater, mint. $2,250. 475-4199.

78 CHEVROLET TRUCK - pickup, ½ ton, best offer. Andy, 289-1755.

83 HONDA CIVIC - 1500S, new tires, sunroof, stereo, 5 spd., 52k mi., excel. cond. $4,000. Ext. 2183 or 3192.

76 PLYMOUTH G. DUSTER - 2 dr., a/t, a/c, am/fm cass., good running cond., good value. $550. 924-3236.

74 MERCURY - 4 dr., V8, a/c, auto good cond. $900. 399-0445.

73 CHEVY SUBURBAN - C-10, 350-4, p/s, p/b, cruise control, runs well. $650. Dick, Ext. 3910 or 732-7564.

76 CHEVY PICK-UP - utility racks, ¾ ton, heavy duty suspension, asking $1,200. Ext. 4666.

76 CHEVY CHEVELLE - 6 cyl., auto., am/fm stereo. $350. 281-7330.

77 DATSUN KING CAB - pick-up, with cap, 4 spd., am/fm, 72k mi., good cond. $1,500. Al, Ext. 5128.

77 MERCURY STATION WAGON - excel. interior & exterior, p/s, a/t, p/b, a/c, p/w, cruise control, must sell. $1,500. Ext. 5161 or 924-1460.

78 CHEVY MONZA - 2 dr., wagon, 4 spd., 4 cyl., am/fm cass., runs well, 90k mi. Kevin, Ext. 4409/4662 or 361-7821 eves.

80 HONDA - CB750, custom, 75k mi. $1,200. 286-0654 after 6 p.m.

80 SUBARU - electric, mini-van, good cond., best offer; 73 HONDA, 750CC, M.C., excel. cond., extras, must sell, best offer. Frank, Ext. 2022 or 399-4480.

77 PLYMOUTH TRAILDUSTER - 4x4, a/t, a/c, p/s, p/b, mech. good, 76k mi., many new parts, $1,650. Ken, Ext. 2350 or 698-4254.

83 FORD ESCORT - a/t, p/s, a/c, am/fm stereo cass., 4 dr. $3,400. Neil, Ext. 2023.

77 LINCOLN CONTINENTAL - 2 dr., excel. cond., must sell, any reasonable offer. Ext. 7590 or 878-1790.

83 PLYMOUTH TURISMO - 29k mi., 2.2L/5 spd., GT-Sport, sunroof, louvers, extras, showroom cond. $4,900 neg. Ralph, 2368 or 928-6654.

79 VOLARE STATION WAGON - good cond., p/s, a/t, roof rack, asking $1,800 or offer. Ext. 3451/3078.

66 NOVA - 44k orig. mi., 6 cyl., new battery & brakes, very good cond. $700. Ken, Ext. 3263.

FRONT CHROME BUMPER - Ford van/pickup, $60.; Ford stock carb/manifold, $50.; tube grill-chrome, $10.; chrome roof rack for station wagon/van, $10. Ray, Ext. 3536 or 289-7615.

Boats & Marine Supplies

16' BOAT TRAILER - spare wheel, $200.; Outboard motor, 7½ h.p., Eska. $200. Ext. 4669 or 744-9429.

19' CRESTLINER - 165 h.p. Mercruiser, i/o, trailer, new canvas, low hours, mint. $7,000. 929-3260 after 7 p.m.

23' ALLMAND - 1973 225 h.p., FWC cuddy, 2 berths, fully equiped, in-water, dockage paid. $7,900. 286-0271 after 6 p.m.

17' BOSTON WHALER - excel. cond., 2 motors, heavy duty trailer, extras. $5,500 firm. John, Ext. 2294.

26' F/G SLOOP PIERSON ARIEL - new cradle, electronics, etc., make offer. Ext. 2051 or 6898685.

16' SILVERLINE - 1973 50 h.p., Mercury, new water pump, just tuned, in water. $1,900. Ken, Ext. 3263.

Miscellaneous

COLOR TV - 13", RCA, very good cond., $100. 924-0582.

GUITAR AMP - Peavey Bandit, 50 watts, 1x12", channel switching, reverb, like new, Greg, Ext. 2575 or 399-1258.

INFANT CAR SEAT - Dyn-o-mite, new, $25.; Traditional 103" floral couch, coffee table, 2 wood end tables, $400. Ext. 2522 or 289-7650 after 6 p.m.

CAMERA - Konica FSI, auto wind, 1.7 & 28-80 zoom-2X converter, dedicated flash, mint, $200. 732-8837.

SOFA - chair, rocker, ottoman, pine frames, coffee table, three side tables, mint cond., $900. Ext. 2529.

MOVING SALE - 1 yr. old 13" color TV, $130.; beautiful colonial walnut shelf, $140.; Colonial sofa, $60.; blankets, winter jackets, utensils. Ext. 5161 or 924-1460.

COSTUMES - theatrical and dance, hardly used, top quality, large selection for children and ladies. 475-4690.

COAL STOVE - Haas & Sohn, $400.; Whirlpool gas dryer, $100.; 10 speed bike, $25.; 2 gas grills, $30. Ken, Ext. 2008.

CRIB - wooden, w/matt., dark brown, clean, $15.; Hedstrom stroller, blue, both good cond., $5., 924-8722.

HEATER - deluxe quartz, rarely used, 120 volt AC, 1400 watts, $20. Mike, Ext. 7941.

CAR SPEAKERS - 6"x9", 15 watts, brand new, cost $50., selling for $25. Joe, Ext. 2898.

COLOR TV - 25", Sylvania console, needs one minor tube, excel. color, must sell, $50. 821-0318.

BABY CARRIAGE - good cond., German made, $10. Ext. 3423 or 924-5543.

POOL PUMP - ¾ h.p. motor, $35. J. Medina, Ext. 7636 or 654-3472.

REFRIGERATOR FREEZER - 17.2 cubic foot, frost free, Westinghouse, $160.; dishwasher, Kitchenaid, both excel. cond., $65. 751-3666.

DANISH STYLE LOUNGE CHAIR - comfortable & sturdy, $15. Ext. 4240 or 286-0295.

GE AIR CONDITIONER - 1,000 BTU/hr., through window, good cond., $30.; Maytag minidryer, electr., 115V, $10. Ext. 2341 or 821-2716.

UTAH SPEAKERS - base reflex cabinets, $60.; couch, chair needs slipcovers, ideal for apartment, $15. Ext. 2529.

DINING TABLE & 4 CHAIRS - mahogany, Duncan Phyfe, 40"x60" + 3 12" leaves + complete set of pads, $800.; sofa, simmons hide-a-bed, sleeps two, clean. $95. 286-0379.

STEREO RECEIVER - Pioneer SK635, turn table BIC912, both $75. 924-3236.

SIAMESE KITTENS - blues + chocolates points, from show quality line, Ramona, 928-3088.

SOFA - matching chairs, green and gold strip, $250.; Ettinger, coffee tables, end tables, gold leaf and cane, $350. Rich, Ext. 7932 or 924-4734.

3M DISKETTES - 5¼", ds/dd, new, best qual., $10./10; Pioneer 70w/ch amp, quartz tuner, new, in box, $160. Jim, Ext. 3372.

TYPEWRITER - IBM elec., w/greek typits, $250.; wallpaper, new, 5 double rolls, beige, $40. Susan Ext. 4267.

MOVING SALE - new, fine dining sets, small electrical appliances and more. 744-7642.

BEDROOM SET - Mediterranean, headboard, 2 nite tables, triple dresser, two mirrors, armoire, $475.; Colonial bunk beds, triple dresser, chest, two nite tables, $350. 878-9239.

BOOKS - Commodore, sound/graphics, Comal handbook, $7. ea.; Men's shirts, size 15, Rich, Ext. 4172.

PIANO - Kimball artist spinet, oak finish, excel. cond., 5 yrs. old, rarely played, $1,200. 277-1332.

WELL JET PUMP - glass lined, tank good cond. 486-4658.

TYPEWRITER - Smith Corona, portable, $100.; computer, Radio Shack, $125.; organ, Casio, new, $150. Ext. 3451/3078.

GREENHOUSE - poly-type, 22'x100', bull house fan, sprinkler, heating system, heavy duty frame, Jim, Ext. 4040 or 289-0876.

NIKKORMAT NIKKOR - auto, 1:1.4, f-50 mm, Bushnet, auto. 200m, leather cases and filters, excel. cond., 286-8563.

Free

KITTENS - three, born 5/18/86, to good home 732-1697.

KITTEN - female, calico, litter trained, needs lots of love. 289-8212.

GUINEA PIG - w/cage, lovable male, wants new home, owner going to college. Sandy, Ext. 3369 or 286-1022.

GERMAN SHEPERD - lovable, needs home, family moved to Florida, female, fixed, all shots. 399-1249.

Yard Sales

HOLBROOK - 32 Laurel Street, off Long Island Avenue, west of A&P, August 9-10, 9 a.m. - 3 p.m. Ext. 2529.

MANORVILLE - group yard/garage sale, Halsey Manor, August 8-9-10, furniture, tools, household, lots more.

Car Pool

STONY BROOK - ride wanted, or will share rides. Arnold, Ext. 2434 or 571-8084.

Real Estate

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

For Rent

SETAUKET - part. furn., 4 bdrm., 2½ baths, walk to SUNY, avail. from Sept. 1, 1986 to Aug. 31, 1987. Ext. 3885 or 751-5849 after 8 p.m.

SHOREHAM - S-WR, 3 bdrms., furn., all appl., Steinway piano, beach rts., $900. mo., 20% off if you'll care for small dog and cat. Ext. 3767 or 744-3744.

MIDDLE ISLAND - 1 bdrm. apt., 5 miles from lab, avail. from Sept. 1. Ext. 3765 or 924-5843.

MANOR PARK - 3 bdrms., six miles from lab, eik, w/w, w/d, gar., 1 yr. lease, $750/mo., avail. Sept. 1. Ext. 2082.

BELLPORT - furn., 3 bdrm., 1½ baths, l/r, d/r, fam. rm., avail. Sept. 1, 1986 - Sept. 1, 1987. Ext. 3784 or 286-0925.

SHIRLEY - 2 rm. apt., walk to beach, $385 incl. util. 744-2821.

SETAUKET - furn. house, 4 bdrms., 2½ baths, walk to SUNY, avail. Sept. 1 to Nov. 1 Ext. 2475 or 751-4539.

MT. POCONO PA. - chalet, summer/winter, 3 bdrms., furn., lake, pool, tennis, horse back riding, sleeps 10, weekly, mid-week, wknd. rates. Ext. 3164.

E. PATCHOGUE - S. of S. Country Rd., 2nd fl. apt., 2 bdrms., l/r, eik, priv. ent., avail. Oct. 1. $450./mo. + util. (no pets) Walt, Ext. 2907 or 698-0576.

SHIRLEY - 2 bdrm. apt., furn or unfurn., priv. ent., walk to beach, 10 min. to lab, security, $600 + util. 399-1250.

HILTON HEAD, S.C. - 2 bdrm. condo, many extras, tennis golf, beach, pool sleeps 6, $400/wk., $200/4 days, taking fall rentals. 585-9149.

SHIRLEY - 5 min. from lab, studio apt., priv. ent., $430/mo. 281-7187.

SHOREHAM VILLAGE - mint secluded cottage on landscaped acre, close to beach & tennis, f/p, piano, seasonal, Oct.-May, $750/mo., 744-2836.

For Sale

AQUEBOGUE - new 3 bdrm. ranch, 2 full baths, l/r, d/r, kit., mudroom, town water, gar., full bsmt., close to golf, parks & boating, $127,500. Tim, 727-7741.

RIDGE - Leisure Knoll, adult community, 1 yr. old house and appl., 2 bdrm., 1 bath, eik, l/r, d/r, w/w, attached gar., city water, security patrol, recreational facilities. $199,000. Ext. 3379.

PORT JEFF. STA. - condo, 2 bdrm., 1½ baths, central a/c, all appl., storms/screens, club house, pool, tennis, $102,500. 928-8522.

SHOREHAM - north, 4 bdrm., Colonial, den, f/p, patio, formal dining rm., bsmt., fenced, $179,000. Ext.3369.

SAYVILLE - 3-4 bdrms., cedar ranch, brick front, 2 baths, gar., central a/c, full bsmt., eik, d/r, l/r, fam. rm., patio, outside shower, appl., w/w, walk to golf, bay, $144,000. 589-2681.

RIDGE - no. Route 25, 1.12 acre plot, 100+x400+, level, 80% cleared, 20% wooded, in estb. quiet locale, $47,900. 924-3236.

SETAUKET - No. of Route 25A, mint, 3 bdrm., 1½ bath, ranch, oak floors, eik, den with f/p, gar., full bsmt., treed property on quiet street. $195,000. Ext. 4768 or 751-2250.

MASTIC BEACH - frame house w/2 bdrm., l/r, eik, full bath, 80x100 plot, $65,500. 744-2821.

Wanted

REAR BUMPER - 1981, Chevrolet Suburban. John, Ext. 4243 or 924-3492.

BASEBALL CARDS - any year, any condition. Ed, 744-7796 after 6 p.m.

BABYSITTER - for 3-year-old, girl who speaks Spanish, few times a week. Noemi, Ext. 3073.

BABYSITTER - for 4-year-old girl, your home in Shoreham/Rocky Point, male/female, afternoons starting Sept. Penny, 744-0903.

HOUSE TO RENT - Bellport, E. Patchogue or Brookhaven, 2 bdrm. min., an outstanding tenant. Bill, Ext. 2378.

BOY'S BIKE - 20" Huffy, good cond., reasonable. Liz, Ext. 3427.

APARTMENT - for BNL couple for 1-2 yr., starting Sept. 1, $600 max. Harvey, Ext. 3758.

HOUSE TO SIT - free, caring, responsible, experienced, any period after Sept. 2. Jack Allentuck, Ext. 2412.

PIANO - upright consol in excel. cond., Jim, 758-8849.

WINTER POOL COVER - good shape, reasonable, 18". Ext. 2964.

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