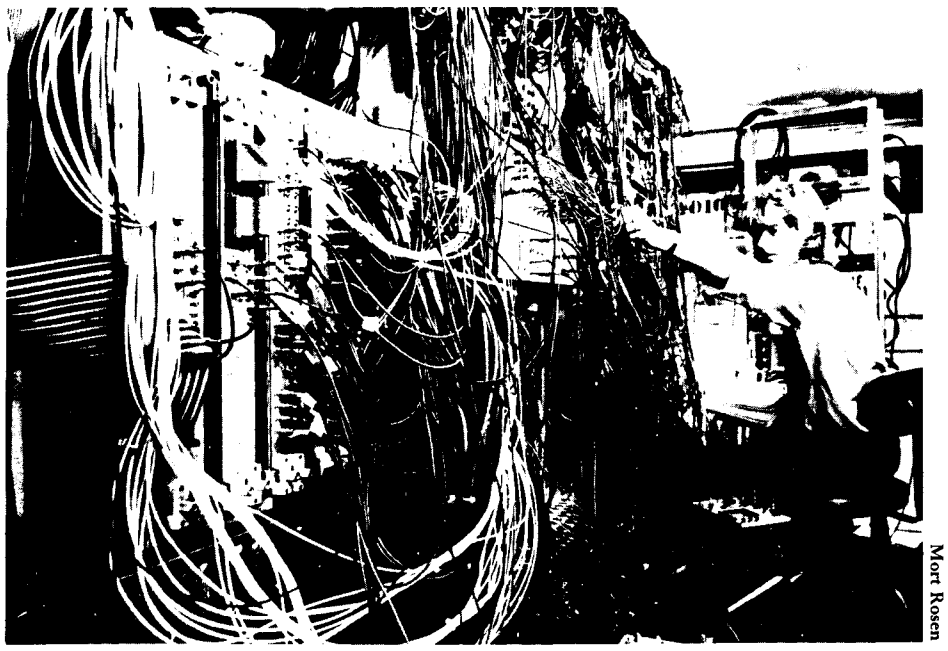
BROOKHAVEN BULLETIN

Volume 34 - Number 34 / August 29, 1980

BROOKHAVEN NATIONAL LABORATORY



Mort Rosen

Michael Schmidt, Yale collaborator on Experiment 735, checks the timing on a counter during an experimental run using FASTBUS. At left is a water-cooled FASTBUS crate. Earlier data acquisition systems used forced air cooling.

A New Standard For The 80s

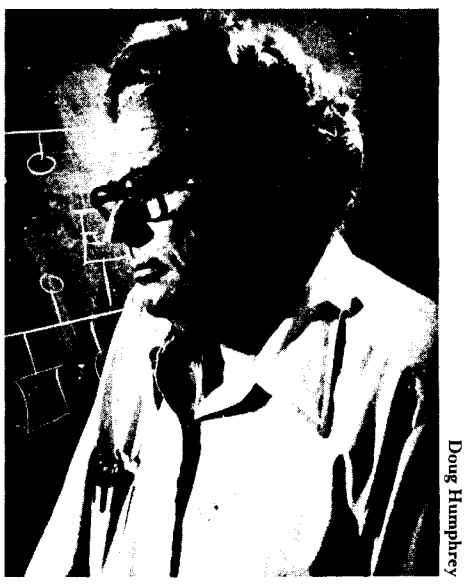
If every home appliance had to have a different kind of plug, and every automobile a special fuel, life would be much more difficult and expensive than it already is. With the whirlwind development of electronic equipment, high energy physics researchers now find themselves in such a situation when constructing equipment for an experiment.

While some electronic equipment must be built explicitly for a particular experiment, most of the devices are similar to those used in other experiments. By having a standard electronic system specification, equipment can be used over and over again in different configurations to do different research. Brookhaven's high energy equipment pool, HEEP, makes this equipment available, most of which has been built to one of two earlier standards, NIM or CAMAC. These standards have served well for several decades, but the development of the integrated circuit, in particular, has made them less useful and more expensive.

Taking advantage of the cost reduction and speed made possible with intregrated circuits, a new computerized data acquisition system called FASTBUS has been built by Larry Leipuner's group in the Physics Department in collaboration with Bob Adair's group at Yale. Experimenters can now control an experiment from a centralized facility. This system will allow equipment to be used over and over again in different experiments, and will allow the easy interconnection of all kinds of electronics. Not only can experiments be done more cheaply and quickly, but FASTBUS will permit new experiments that cannot now be done with current equipment and standards.

Nowadays, in most high energy experiments, computers are used to gather and analyze data, and to monitor and control the equipment. FASTBUS takes its name from what is known as a computer bus. A computer bus is the linkage between the various parts of the computer, and FASTBUS extends this architecture to all of the high energy experimental electronic equipment. When viewed from the computer side of the bus, drift chambers or proportional wire chambers, or scintillation counters are just other devices such as card readers or printers. Now, experiments can be controlled from a central point. The more repetitive and boring tasks can be relegated to automatic facilities provided by the computer. As soon as control of the equipment becomes routine, experimenters can transfer it easily to computer management.

FASTBUS *is* fast. Normally, the speed is about 10 million, 32 bit transactions per second. Blocks of data may be transferred at about two and one half times this rate, giving almost a billion bits of transfer per second.



Doug Humphrey

Larry Leipuner

These rates are greater than present computers can handle, but can be processed by the next generation of computers. Currently, however, the speed can be used to do low level processing while the data is still on the bus.

Experiment 735, now running at the AGS, has a simple data processor module designed for just this purpose. Using special registers, the processor relieves the computer of the task of finding which of over 200 scintillation counters responded to an event. The on-bus processor directs the data gathering and performs the data compaction as well.

This experiment, a Yale/BNL collaboration, is the first experiment to use FASTBUS. It is Leipuner's expectation that, in the future, most high energy electronics will be built to this more powerful standard.

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 51074 $5.25
Limnological Aspects of Acid Precipitation. (Proceedings of the International Workshop held at the Sagamore Lake Conference Center, September 25-28, 1978). G.R. Hendrey, Editor

BNL 51106 $4.00
Regenerative Process for Desulfurization of High Temperature Combustion and Fuel Gases. Progress Report No. 13, April 1 - September 30, 1979. M-S. Shen, et al

BNL 51108 $4.00
Nature and Utility of Some Unsteady Characteristics of a Fossil-Fuel-Fired Boiler. A.L. Berlad

BNL 51116 $5.25
Environmental Control Technology for Atmospheric Carbon Dioxide. Final Report. A.S. Albanese and M. Steinberg

BNL 51117 $4.00
Alternative Process Schemes for Coal Conversion. Progress Report No. 3, June 1 - August 31, 1979. M.J. Sansone and V-D. Dang

BNL 51120 $4.50
Development of Hardware Simulators for Tests of Solar Cooling/Heating Subsystems and Systems. Phase I. Residential Subsystem Hardware Simulator and Steady State Simulation. P.C. Auh

BNL 51121 $4.50
Development of Hardware Simulators for Tests of Solar Cooling/Heating Subsystems and Systems. Phase II. Unsteady State Hardware Simulation of Residential Absorption Chiller. P.C. Auh

BNL-NCS-51123 $8.00
ENDF-300 Standard Reference and Other Important Nuclear Data by the Cross Section Evaluation Working Group. The National Nuclear Data Center

BNL 51129 $4.00
ESUSA; U.S. Endangered Species Distribution File. J. Nagy and C.E. Calef

NUREG/CR-1249
BNL-NUREG-51130
Advanced Reactor Safety Research Division, Quarterly Progress Report. July 1 - September 30, 1979. A.J. Romano, Editor

NUREG/CR-1248
BNL-NUREG-51131
Water Reactor Safety Research Division, Quarterly Progress Report. July 1 - September 30, 1979. A.J. Romano, Editor

NUREG/CR-1251
BNL-NUREG-51132
Properties of Radioactive Wastes and Waste Containers. Progress Report No. 14, July - September 1979. P. Colombo and R.M. Neilson, Jr.

BNL 51133 $4.00
Hourly Variability of Sample Chemistry During Precipitation Events and its Relationship to Meteorological Parameters. G.S. Raynor and J.V. Hayes

BNL 51135 $5.25
Regional Issue Identification and Assessment Program (RIIA): Environmental Impacts and Issues of the EIA Mid-Mid Scenario: Federal Region I (New England). J. Brainard and J.S. Munson

BNL 51136 $5.25
Regional Issue Identification and Assessment Program (RIIA): Environmental Impacts and Issues of the EIA Mid-Mid Scenario: Federal Region II (New York and New Jersey). J. Brainard and J.S. Munson

BNL 51137 $5.25
Regional Issue Identification and Assessment Program (RIIA): Environmental Impacts and Issues of the EIA Mid-Mid Scenario: Federal Region III (Mid-Atlantic). J. Brainard and F.W. Lipfert

BNL 51139 $4.00
Spar Buoy Oceanographic Telemetry System Operational Modifications. E. Divis, et al

BNL 51144 $5.25
Fuel Cell Applied Research: Electrocatalysis and Materials. Quarterly Report, January 1 - March 31, 1979. S. Srinivasan, et al

BNL 51145 $4.00
Advanced Amorphous Materials for Photovoltaic Conversion. Annual Report, October 1, 1978 - September 30, 1979. R.W. Griffith, et al

BNL 51150 $6.00
Semiannual Report for the Period April 1 to September 30, 1979 of Work on: 1) Superconducting Power Transmission System Development, 2) Cable Insulation Development. Division of Advanced Technology Applications.

BNL 51154 $4.00
Stop Bandwidths of Nonlinear Beam-Beam Resonances. G. Parzen

Head of P & GA

Effective September 1, John B. Laurie will succeed Robert P. Brown as head of the Photography and Graphic Arts Division. Laurie has been Assistant Manager of the Division since December 1, 1978, in which capacity he was primarily responsible for personnel actions. Before assuming the latter duties, Laurie was Technical Supervisor of the Quick Copy Service Center.

Patents Awarded

Richard Holroyd and **Benon Bielski,** Chemistry Department, were issued U.S. Patent No. 4,199,419 for inventing a photochemical method for generating superoxide radicals (O_2^-) in aqueous solutions.

Meyer Steinberg, DEE, was awarded U.S. Patent No. 4,197,421 for an invention involving synthetic carbonaceous fuels and feedstocks. A primary object of this invention is to provide a process for extracting CO_2 from the atmosphere and combining this with electrolytic hydrogen to produce synthetic gas and gasoline.

No Weekend Tour

Because of the Labor Day holiday, the Lab will be closed to public tours this weekend. Tours will resume September 6 and 7.

New Post For Brown

The appointment of **Robert P. Brown** as Information Technology Administrator was announced this week by Associate Director Vincent O'Leary. Effective September 1, Brown will administer a program designed to develop a Lab-wide information network comprised of word processors, electronic typewriters, computer graphic systems and copiers which communicate with each other, with data bases and with automated micro or macropublishing systems.

In this capacity, he will interact with the departments and divisions on the selection of new components and the modernization of existing equipment. In addition, Brown will serve as a technical advisor to the Divisions of Contracts and Procurement and Supply and Materiel on the acquisition of word processors, copiers and micrographic equipment.

Outing '80

—photos by Humphrey

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In Memoriam

Raymond E. Farmer, a BNL Firefighter, died on August 18 after a long illness, at the age of 64. He had been a member of the Fire and Rescue Group since January 3, 1961. In a time-honored tradition, his fellow firefighters paid tribute to their comrade, and an honor guard of six BNL Firefighters accompanied the cortege. Farmer, who lived in Mastic Beach, is survived by his wife, Thelma, and two sons; Tirre, a BNL Refrigeration and Air Conditioning Apprentice, and Raymond, who resides in Shirley.

Tennis Alert

The tennis court reservation system will end for the season today. Resurfacing of the courts is scheduled to begin on Tuesday, September 2, and is expected to take about three weeks. The courts will be unavailable for play during this time.

Diners Note

At the Cafeteria the snack bar will be open from 9:00 a.m. to 2:00 p.m. daily on Sunday and Monday, August 31 and September 1.

On Saturday, August 30, the snack bar will be open from 9:00 a.m. to 2:00 p.m. at the Brookhaven Center.

The Tap Room at the Brookhaven Center Club will be closed on Saturday and Sunday, reopening at 5:00 p.m. on Monday, September 1.

The Vended Food Service in Building 912 will be in operation throughout the Labor Day weekend.

Cafeteria Menu

Week Ending September 4, 1980

Monday, September 1
Labor Day holiday
Snack bar service - 9 a.m. to 2 p.m.

Tuesday, September 2

Navy bean soup	(cup)	.45
	(bowl)	.55
Chicken cacciatore & 1 veg.		1.50
Sweet & sour pork & 1 veg.		1.55
Hot Deli - French toasted grilled ham & cheese		1.45

Wednesday, September 3

Minestrone soup	(cup)	.45
	(bowl)	.55
Fish & chips		1.45
Saga's own lasagna & 1 veg.		1.45
Hot Deli - Philadelphia steak & cheese hoagie		1.55

Thursday, September 4

Corn chowder	(cup)	.45
	(bowl)	.55
Chicken pattie parmigiana & 1 veg		1.45
Corned beef & cabbage		1.50
Hot Deli - Roast fresh ham	(on bread)	1.50
	(on roll)	1.60

Friday, September 5

Clam celery soup	(cup)	.45
	(bowl)	.55
Beef sukiyaki on toasted Chinese noodles		1.50
Seafood platter w/french fries		1.87
Hot Deli - Hot Italian sausage & pepper hero	(on bread)	1.45
	(on roll)	1.55

Retiree

Mort Rosen

Claire F. Hull, Principal Office Services Assistant, Medical Department, is retiring today. She has been with the Lab since September 16, 1963. Her immediate plans are to repair her house, then visit with a son in Switzerland and two others on the West Coast. After that, she will stay at her home in Mastic doing all the things she never had time to do before.

Golf

The fifth tournament of the BGA golf season will be held on Tuesday, September 9 at the Rock Hill Country Club. There will be a $6 greens fee and a $1 entry fee. Assigned tee off times will begin at 11:30. Send entry fee to Bob Mills, Building 535A (x3470) **no later** than September 4. BGA tournaments are open to all employees, their spouses, and retired employees.

Forty-four golfers took part in the fourth tournament held at the West Sayville Golf Course. John Millener won low gross for 18 holes with a 78 and Jim Petro won low net for 18 holes with a 66. Other winners were: low gross – front 9, John Usher (38), closest to the pin and low gross – back 9, Les Lawrence (40), low net – front 9, John Dioguardo (32), low net – back 9, Karl Neuberger (32) and longest drive, Ralph Brown.

Swimming Pool

Admission Fees and Schedule

Tuesday, September 2, marks the start of a new three-month season at the swimming pool. Season tickets will be on sale at the pool during open hours starting on that day.

Fees:

Season Tickets–Valid 9/2–11/30/80
(season ticket fees are not prorated)

Individual Membership	$15.00
Family Membership	$20.00

Daily Admissions

Employee/Family Member	$1.25
Guest	$1.75

Schedule:

Monday through Friday
11:00 a.m. to 1:30 p.m.–employees only
5:00 p.m. to 9:30 p.m.–employees/families/guests

Saturday and Sunday
1:00 p.m. to 6:00 p.m.–employees/families/guests

The pool is closed on all Laboratory holidays.

Guest Ruling:

One guest per employee is permitted at the pool. Advance arrangements for additional guests (but not more than five at any one time) may be made at the Recreation Office in Personnel.

Arrivals & Departures

Arrivals

Richard A. Casella	Ph. & Gr. Arts
Garry N. Hubbard	Physics
Kathryn A. Kissel	Biology
Arnold C. Rudolphi	Plant Engrg.
Alfonso Sanchez	Central Shops
Clifford J. Schnepf	Nuclear Energy
Maria Yanez	Energy & Env.
Hee J. Yoo	Energy & Env.

Departures

Daniel R. Clipperton	Energy & Env.
Vi Duong Dang	Energy & Env.
Barrry A. Freedman	Physics
Marvin L. Hurt	Accelerator
Peter M. Kroger	Chemistry
Sherie Michaile	Accelerator
Marion L. Stelts	Physics
Paul C.C. Wang	Applied Math.

Mountain Club

There will be a meeting of the Mountain Club at 7:30 p.m. on Thursday, September 4, in the North Room of Brookhaven Center. Plans for trips this fall will be discussed.

Softball

League I

Makeup Game:
Six Pax 8 – Phoubars 7
Phoubars Win – Deegenerates Forteited
Six Pax 11 – Ravens 6
Blue Jays 14 – Source I 13

A good hitters game – game was tied till the seventh inning – and was won in the last of the seventh. For the Source, Wayne Rambo and S. Thomas were 3 for 4, E. Meier Jr. was 3 for 3, J. McCafferty and S. Thomas had home runs. For the Jays, "Papa" Meier was 3 for 3, Marvin Hurt and Juan Alvarez were 3 for 4, Wally Schaffer 4 for 4 with a home run and 7 RBI's.

League II
Roga 18 – Titans 12
Dirty Sox 7 – AMD 6
Moles 19 – Cardinals 18

League III
Huff & Puff 17 – Lights Out 15
Big Sticks 24 – Ice Pops 3
Nuke Powers 17 – Medical 8
Brewmasters 2 – Binary Bombers 1

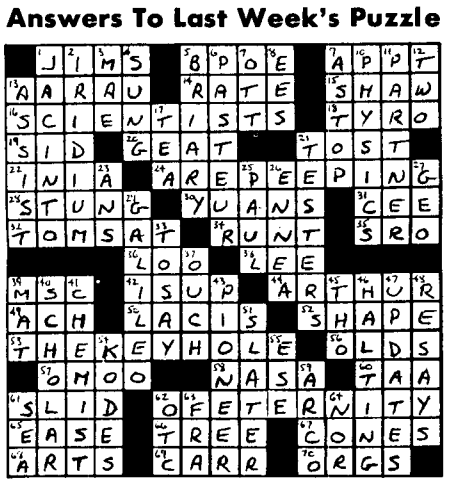
League IV
Random Sample 23 – Thrids 10
Gary Hoerning hit 5 consecutive home runs.
Survivors 12 – Balls & Strikes 11
Nads 14 – Turkeys 9
E-Z Riders 7 – Diamonds 6
Gary Goldstein hit two home runs. B-J Mingino knocked in the winning run, again.

League V
Source III 14 – TNT 12
Who's On First 17 – Who Cares 7
Carmen Ackerman hit her "USUAL" home run!
Mudville Sluggers 13 – Underalls 8
No Names 13 – No Feedback 6

Final Standings – League V

Team	Wins	Losses
TNT	11	3
No Names	10	4
Who Cares	9	5
Who's On First	8	6
Source III	7	7
No Feedback	5	9
Mudville Sluggers	3	11
Underalls	3	11

Answers To Last Week's Puzzle



Hospitality News

A morning coffee will be held Tuesday, **September 9,** from 9:30 to 11:30 a.m., in the Brookhaven Center.

All wives of Laboratory employees are welcome. Please come and bring the children. Babysitting will be provided free of charge. It is suggested that you bring along a toy or two for your child to play with.

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.

1443. RIGGER'S ASSISTANT (two positions) - Plant Engineering Division.

1444. DRIVER (two positions) - Plant Engineering Division.

1445. BUILDING AND GROUNDS UTILITY WORKER (two positions) - Plant Engineering Division.

1446. LABORER (two positions) - Plant Engineering Division.

1447. LABORATORY CUSTODIAN (two positions) - Plant Engineering Division.

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

1448. CHEMICAL ENGINEER - Requires a minimum of a master's degree in chemical engineering. Responsibilities will involve thermochemical processes (non-electrolytic) for hydrogen production. Will work with process design, engineering, thermodynamics and require some knowledge of construction techniques and plant costing. Will initially be assigned to the Chemical/Hydrogen Storage Program. Department of Energy and Environment.

1449. TECHNICAL POSITION - Requires AAS degree in chemistry or in medical laboratory technology or the equivalent capabilities. Should have experience in general chemical analysis. Will do chemical analysis of various radioactive and non-radioactive samples. Safety and Environmental Protection Division.

Autos & Auto Supplies

74 FORD - F250, 4 WD, 360 V8, 4 spd, am/fm 8 trk, 51,000 mi. $1,900. 325-0579.

72 CHEVY - Sta. Wgn, p/s, p/b, new brakes/batt, good cond. $400. Len, Ext. 4487.

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

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

70 CATALINA - 4 dr, 45,000 mi, nice car w/fender & trunk lid damage. $500. Ext. 4096.

75 MOTORCYCLE - Honda 360 CL, elect. all acces., 50 MPG, 9,500 mi, very good. Levine, Ext. 7102 or 878-1124.

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

(Continued on page 4)

Autos & Auto Supplies (Continued)

77 HONDA - 750K, low miles, excel. $1,600. Rich, (days) Ext. 3572 or 277-1129 eves.

73 AUSTIN MARINA - 26+MPG, auto, reg. gas, am/fm, needs work. 475-2069 after 5.

A/C COMPRESSOR - Chrysler w/electric clutch, brackets & idler. $25. D. Vail, Ext. 7167 or 924-4058 after 5.

68 VW BUG - auto, 4 excel tires, needs engine overhaul. $125. Exe. 3397 Louise.

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

QUARTZ HEATER - brand new. Save fuel w/this efficient, portable Quartz Heater. $70. Mitzi, Ext. 2956 or 751-0023 eves.

WHEELS & TIRES - 4 mounted Western spoke wheels w/10 x 15 Gillette trailrider tires, like new. $325. Glenn, 289-0413.

55 STUDEBAKER - good for parts, best offer. 732-3073 after 6.

76 GRANADA - excel cond, std trans, 24-28 MPG, economical. $2,350. Lou, Ext. 4615.

68 CHEVY - Wagon, a/c, p/s, p/b, a/t, 3 spd, 327 V8 Caprice, good tires, good transp, rust. $225. Ext. 3394 or 588-1367 eves.

71 FORD - LTD, 4 dr. sedan, need minor work. $300. 981-4257 after 6 pm.

73 BUICK - LaSabre, all power, 73,000 mi, new tires & muffler, $750. Eto, Ext. 7750 or 3104.

75 MONTE CARLO - a/c, power brakes, & starter, cruise control, vinyl top, excel cond. $2,200. 286-8893.

TIRES - (2) E78-14 recapped snows, $15. both; radiator Dodge or Plymouth V8, $30. Frank Rumph, Ext. 4581 or 588-3565.

69 MGB - good cond, good gas mileage. $800. Betty, Ext. 3755.

MAG WHEELS - (4) 14" chrome, 4 holes. $45. set. Bill, Ext. 3355 or 472-4684 after 6.

77 YAMAHA - XS 400, 6 spd, mags, 5,000 mi., 50 MPG extras. Jerry, Ext. 3894 or 799-7160.

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

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

69 FORD - E100 Van, 6 cyl, standard, 77,000 mi, dependable, $850. 654-1678 after 6.

73 YAMAHA - 500cc, limited edition, new tires, windshield, extras must see. $995. 929-4885.

74 DATSUN - 710, excel cond, 86,300 miles, $1,000. or make offer. Ext. 3379 or 3015.

73 CAMPING TRAILER - Nimrod, sleeps 8, full kitchen, crank to raise, vinyl roof, v.g. cond. $900. Joe, 345-4254, or 281-7683 after 5:15.

1970 307 MALIBU - a/c, p/b,p/s, radio, 5 like new Goodyear steel belted radials, 4 new brake drums. Needs exhaust system & body work, $400. Joe Trebing, Ext. 4204 or 588-3146.

307 CHEVY HEADS - (2), $35., pair. Joe, Ext. 4204 or 588-3146.

76 CHEVY NOVA - 6 cyl. $2000. Joe Trebing, Ext. 4204 or 588-3146.

Boats & Marine Supplies

21' LUHRS - engine, needs work, trade for sailboat or best offer. Ed, Ext. 7943.

60 HP EVINRUDE - 1966, all elect., extras, can demo, excel cond. $295. Bob Doering, Ext. 4474 or 3080.

12' SAILBOAT - all foam, $75; 8' Pram, $75. Bill Dieffenbach, Ext. 2434.

SEARS - Super Gamefisher 7½ motor highlander trailer, extras. $500. Walt, Ext. 3418.

Yard Sales

YARD SALE - Aug. 30 & 31st. 34 Truberg Ave. No. Patchogue; air tight stove, baby items, much more. 10 to 5 pm. 654-2831.

Miscellaneous

HARVARD - king size frame & headboard, any reasonable offer. 929-4068 or 212-348-7958 collect.

SOFA - (2) end table, cocktail table, Medit. style, good cond. $100. or best offer 744-4047 or ext. 2546.

ACT - PSA, SAT, college HBR, Biology, Physics achievement test review books. Cheap. 744-2947 after 6.

BENNINGTON - Pine chair, loveseat, rocking chair, $150; Colonial Pine step table, $40; Hammock, $5. 732-1298.

SCUBA EQUIPMENT - 1 yr. old, make offer on complete outfit. 5'7", wetsuit seperate. Ext. 2437 or 924-7909.

ROTOTILLER - Hahn heavy duty, 2' Tines, 4 hr. Briggs Eng, gear driven, 2 yrs old, v.g. cond. $225. Tom, 325-1033.

MAPLE STEREO - am/fm record player, GE solid state, like new. $75; wall mirror, 44"x72", $50. Ext. 3058.

SEWING MACHINE - portable, straight stitch & zigzag. good cond. $45. Rowe, Ext. 2345. 878-9384 eves.

MERCURY OUTBOARD MOTOR - 1974, 4½ hp, excel cond. Mike, Ext. 2081, 878-9384 eves.

PACHYSANDRA PLANTS - healthy & thriving; 25 plants for $2. Jean, 929-4522.

AQUARIUM - 55 gal., stand, hood, gravel, pumps, and acces. $60. Frank, Ext. 4709 or 281-4607.

ROTOTILLER - 7½ horse, 1 yr. old, was $600. asking $300. 981-0840.

OIL TANK - 275 gal. A-1 cond. $100. Dinos, Ext. 4666.

BABY BUGGY - 3 in 1 type, never used, $30; baby crib, blond. $25. Carl, Ext. 4680.

WASHER - Sears, like new, $175; Dryer, 115 volt, portable, $125. Peter, Ext. 3695.

DINETTE - round pedastle table, 4 cushioned chairs, gold, excel cond, also hatch cover coffee table. Sue, Ext. 2913 or 751-5829.

SOFA - vinyl covered, $20; chrome vinyl covered directors chair, $30; Hedstrom tricycle, $20; 16" bicycle, $5. George, Ext. 4460.

WATER PURIFIER - $25; Weil McLean Oil Burner, v.g. cond. $25; pump motor & regulator, $12; (2) snow tires to fit VW bug, $5. C. Hull, Ext. 3655 or 281-2002.

POOL TABLE - ¾ slate must be dismt., ping pong table top, best offer. 543-0079 after 6.

STEREO - technics SA-7300, 40 w/chan amp, ST-7300 tuner, JVC KD-55 tape deck, Gerrard 440 turntable. All $750. 924-8644.

AIR COND - 14,000 BTU Emerson, top cond. $50. 475-8187.

DIAMOND RING - approx. 20 points in Y/W gold setting, $125. Ext. 2905 or 581-9326.

LIMITED EDITION PLATE - 1979 LaScala Grand Opera Collection (ivory alabaster) w/certificate of authenticity, $45. Pat, Ext. 2452.

OFFICE DESK - L-shape, heavy walnut formica top, full suspension file drawer, excel. Ext. 4674 or 286-2505.

CHANDELIERS - (2) wrought iron colonial style, $15. ea; childs booster seat, $2. 929-6748.

CLOSET DOORS - folding w/track, $8. Morris, Ext. 4188.

UPRIGHT PIANO - mint cond, Ext. 3701 or 751-8128 eves.

PING PONG TABLE - balls & paddles, $25. Firm. 924-6354.

RADIO SHACK - Modulaire 8 tuner, 8 trk., 1 yr. old, includes speakers $60. Allan, Ext. 4985.

CEMETERY PLOTS - (2) at Pinelawn, reasonable price. 751-8223.

TYPEWRITER - Smith Corona, portable. $50. 369-2504.

FREE - Electric range, bottom half of American, all burners work. 878-0222.

KARATE UNIFORMS - (2) size 5, (2) size 6, white, includes belt. $10. ea. Barry, Ext. 4087 or 727-5956.

CHANDELIERS - G.E. trash compactor; dresser; Zenith 19" color TV table model; kitchen or dinette set. Ext. 4532 or 272-4091.

LENSES - for Pentax camera, zoom F3.8 (85-205mm) wide angle F2.8 (28mm), brand new. Louise, Ext. 4192 or 363-6473 eves.

AIR TIGHT - A.F.S. wood burning stove, thermostatic blower, excel cond. $450. 281-0287 after 6 pm.

BOOKS - photography, Time/Life series, complete set & index. $50. Firm. Fred, Ext. 4407.

FIREPLACE - free standing, Majestic w/pipe, good cond, $125. Ron, Ext. 4082.

HORSE TRAILER - '74 Kingston thoroughbred, $2,000. 286-2885 after 5.

DINETTE SET - 48" round, formica top, chrome pedestal, excel cond. $125. 325-1961.

35 MM - SLR Ricoh (Sears) telephoto, extension, case, $90. 751-0833 after 6.

BEDROOM SET - dbl. dresser, mirror, nightstand & bureau, $125. Roseann, Ext. 3199 or 475-6622 eves.

TURNTABLE - Accoustic Research, solid wood base w/ dust cover, perfect cond. $50. Ext. 3238 or 473-6862 Ron.

OIL BURNER - gun, good cond. $25. Bob Doering, Ext. 4474 or 3080.

MUST SELL - GE Washer, 18 lbs. heavy duty, 4 water level, linen filter, 1 yr. old, like new, excel cond. $200. Ann, Ext. 4959.

TV - 21" color Zenith Console, walnut cabinet, $50. Ext. 2301, 2302 or 727-4515 after 5:30 pm.

ROLLER SKATES - hamburger-maker; travel iron; heater; grease gun; am/fm transistor. Ext. 3027.

RADIO - stereo, short wave console, Grundig, blond finish. $200. 475-5052.

PEANUT MACHINE - 10¢ & 25¢ dispenser w/built in heater & stand. Barry, Ext. 4087 or 727-5956.

DINING ROOM TABLE - (2) leaves, buffet, china closet, four chairs. $300. Ext. 2423.

BABY ITEMS - changing table, $10; stroller, $18; infant seat rocker, $15. Ron, Ext. 4385 or 744-6216.

TOASTMASTER - Deluxe range, variable heat, single burner, unopened carton, college use. $20. Walt, 345-3418.

DOUBLE BED - bookcase headboard, frame, mattress, box spring. $30/offer. Mike, Ext. 4360 or 698-5861.

WOOD - full cord 4'x4'x8' cut & split, small for stove, mixed hardwoods, some pine. $150. Pete, 281-7379.

GAS HEATER - for use in big rooms, good cond. $225. can convert to natural gas 588-6417.

BABY CARRAIGE - stroller, $15; port-a-crib, $10. good cond. Ask for Renée, Ext. 2926 or 363-5279.

BIKE - 10 spd "Chiorda", 24" frame, simplex gears, excel cond; (2) 13" Pirrelli fiber-belted radials. Bob, Ext. 3565 or 924-9210.

STOVE - American made "Kombi" coal/wood airtight, heats up to 2000 sq. ft. $499. Bob, Ext. 4551 or 259-2159.

BIKE - boys 10 spd, $35; 20 gal. aquarium, hood, stand, $25; 9 x12 wool braided rug, $85. 732-1298.

WELL PUMPS - Flint & Walling, 1 HP jet pump, Deming ½ HP, take both for $100. Jerry, 281-5667.

LADIES TRIPLE DRESSER - w/mirror, man's dresser, 2 night tables, all pine. $375. 286-3923.

COLOR TV - 23"; iron; scale; hairdryer; tupperware items. Ext. 3192.

AQUARIUM - 20 gal, fully equipped w/stand, live fishes. Ext. 3027.

CONTEMP - Den set, love seat, 2 chairs, 2 end tables, entertainment center & table. Debbie, 467-2422.

T.V. - 19", colonial style, console model. $40. 289-1755, A. Brems.

BIKE - Shwinn Deluxe Stingray, boy's, mint cond., glossy blk, $55. 929-8577.

COLOR TV - Philco, 19", almost new, used 1 yr., $250, Ext. 3134 or 2432.

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, 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.

WESTHAMPTON AREA - Mobile home, 12'x60', 2 bdrms, eik, stove, refrig, washer, laundry rm, dryer, 2 tool sheds, porch, patio, wooded landscaped plot. $11,500. 325-1112 after 5 pm.

CENTRAL ISLIP NO. - 1 acre, hi ranch, 8 rms, 1½ baths, 24x28 sunken patio, possible M/D, many extras. Ext. 2514 Bob M. 234-8564.

MORICHES - Property, ½ acre, wooded, priv. beach & marina rights. $17,500. 878-1912 after 6 pm.

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

SHOREHAM - Large 4 bdrms, 2½ bath colonial, wooded ⅓ acre lot on quiet street, 2 car garage, eik, fam rm w/fp, excel school district, low taxes, north of 25A. $65,900. 744-4787.

STONY BROOK - 8 rms Colonial, 2½ baths, 2 car garage, expanded kit, 3 Village Schools, C/A, C/V, fp, re-insulation, 6% assumable mortg. $63,000. 246-7139 or 689-9409 eves.

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, treehouse, taxes $550. $25,000 Chris, 281-7379.

PROPERTY FOR SALE - Wading River, No. of 25A, exclusive area, lovely wooded building plot. Slightly under two acres. Owner asking $18,000. 928-0158 NO BROKERS.

SOUND BEACH - 9 yr. old cedar ranch on ¼ acre, 3 bdrms, full bsmt, OHW heat, re-insul attic, oak floors, deck, shed, stockade fence, corner location. $33,500. FHA avail. Taxes $1,300. Dan, Ext. 2012 or 744-6148.

For Rent

WADING RIVER - Historic 3 bdrm house, 2 baths, fp, $395/mo. No Brokers. 929-4068 or 212-348-7958 collect.

NORTH SHIRLEY - 1 bdrm apt., 3 rms, bath in priv. home. Only 5 min. from Lab. 399-2830.

MIDDLE ISLAND - Sub-lease 2 bdrm apt., $290./mo. includes heat. Sept. 1, 1980. 10 min. from Lab. 924-7064 after 6 pm.

YAPHANK - 5 rm modern duplex apt, 3 mi. from BNL. L/R, D/R, kit, 2 bdrms, full bsmt & patio. $400/mo. 1 mo. security-includes heat & water. 581-2909.

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

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

MASTIC PARK - cottage, 2 bdrms, $220/mo. plus util. Security, references. 281-7844.

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

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

BAITING HOLLOW - waterfront, 2 bdrm house, furnished, 2½ baths, study, etc. Available Dec. 1980 to June, 1981. 727-8631.

Car Pools

CORAM/STRATHMORE E. - want to start/join existing car pool. Ext. 2073.

SMITHTOWN - driver, Ext. 3268.

PATCHOGUE - from Patchogue via E. Patchogue, Bellport, on-time, have opening for paying rider. Alyce, Ext. 2902.

SOUTHAMPTON/HAMPTON BAYS AREA - to start or join existing car pool. Stacey, Ext. 3397.

KINGS PARK/FORT SALONGA - driver to join car pool. Eva, Ext. 2050.

NORTHPORT AREA - 25A & Laurel Ave. Interested in sharing driving w/one or two others. Ext. 2514.

HUNTINGTON AREA - wish to share driving w/one or two others. Alex, Ext. 3310.

SOUND BEACH/MILLER PLACE - share driving w/2, flexible details. Don, Ext. 3999 or Bill, Ext. 3617.

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

HUNTINGTON/SURROUNDING AREA - want to join or start car pool; 8:30-5:00, Gerry, Ext. 4471 or 4460.

Wanted

FOLK DANCERS - willing to learn/teach International dances (Mayim, Hambo, Syrto, Tarantella, Polka) Pat, Ext. 4255.

CHILDCARE - for 2 yr. old Tues. & Thurs. morns. 9-1 pm. Our home. Wading River. Susan, 929-6942.

HOUSE/APT. - to rent, 2 bdrms, No. of LIE between Exits 39-49. Oct. 1st. Ext. 2115 or 744-0146.

BABYSITTER - full time in my house, Sept. 1st. Transp. & references required. Roger, Ext. 4974 or 473-0475.

BABYSITTER - Holbrook, for 2 active children, approximately one day a wk., 8-5:30 pm, in my home, experienced, reliable, references. Bette, 589-8331.

LARGE DOG HOUSE - for 4 yr. old German sheperd, will pick up. Ext. 3716 or 475-0656.

ALUM. JON BOAT - good cond, reasonably priced. 11'-12'. Ext. 2514.

TV - 19" B&W, perfect working cond. Ann, Ext. 4959.

EXERCISER - Bicycle or rowing type, good cond. Ext. 4045 or 289-5770 after 6.

REFRIG - small for college dorm. Peter, 744-2097.

HOME - for attractive blk & white cat, recently abandoned by his owner. Ext. 3184 or 924-3677.

INTERESTED - in purchasing minerals, mineral collections, old mineral books, etc. Plotkin, Ext. 4717.

WOODSPLITTING - hammer & wedge. Joe, Ext. 4139.

Services

CHAUFFERED - Luxury Limo service, for Wedding, proms, all occasions. 698-2268 or 698-2266.

FIREWOOD - seasoned hardwood, cut & split to your specs. Delivered. $160/cord. Ken, 924-3756.

CAR WAXING - wash & wax, your home/mine. $20. Steve, Ext. 4297 or 543- 9008.

AUTO REFINISHING - all areas of body work performed, sm car discounts. Bob, Ext. 2546 or 744-4047.

ALARMS INSTALLED - burglar, fire, residential, commercial, custom designed, 15 yrs. experience, free estimate. 924-5668.

HARBOR FANTASIES - lessons & rentals, sunfish, windsurfers, hobie cats, day sailors, fishing boats & water skiing. 324-9606.

CHIMNEY SWEEPS - f/p, stove, chimneys, protect your homes. Insured, lab employee discount. Bill, Mike, 584-6425.

ASPHALT PAVING - and sealing. Bob, 475-4382.

BABYSITTING - 2 yrs. & older, experienced mother, fenced yard, playmate, references. Donna, 281-8031.

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

CLEANING - home, apt., office. For free estimates call 751-2350.

PIANO TUNING & REPAIR - reasonable rates and conscientious service. 751-4985.