

In CBA Tunnel:

Full Cell Reaches Full Current

A crucial major milestone for the Colliding Beam Accelerator (CBA) was passed last Friday — three weeks ahead of the original R&D schedule — when a cell of eight superconducting magnets, installed in the CBA tunnel, reached the full operating current of 3770 amperes (A), for a magnetic field of 52.8 kilogauss (kG).

The importance of this test lies in the successful operation of a complete system — a string of six dipole and two quadrupole magnets, together with electrical power supplies and safety equipment, vacuum systems and a special helium refrigerator. Achieving this milestone satisfies one of the major R&D requirements of the Department of Energy.

Commenting on the effort required to bring all these systems together, Associate Director Paul Reardon said, "The achievement of this milestone, and the other one on production of eight field quality magnets [see box], demonstrates that Brookhaven has indeed solved the major CBA magnet R&D issues. It also says to the world we are ready to continue and complete this outstanding research facility that is now about one-third finished. We must now focus our attention on the completion of magnet fabrication facilities so that we can proceed rapidly into the next phase of magnet production. I congratulate all of the BNL personnel involved in the CBA activities for their important achievements. You should all be justifiably proud of your work."

For the test on February 25, the superconducting magnets in the full



Looking over the controls for the cryogenic system in the CBA full cell are (kneeling) Mark Sardzinski, (standing, L-R) Roger Baker, Al Schlafke and Don Brown.

a.m., only 2½ hours after startup. Those monitoring the tests did not try to contain their satisfaction. "The tunnel rang with joyous shouts," said Bob Louttit, head of the CBA Cryogenic Division.

The first major step towards that exciting moment was taken last September when the R&D refrigerator was transported from Bldg. 902 to the CBA tunnel. In October, the first superconducting dipole magnet was similarly transported and was followed in short order by five more dipoles and two quadrupole magnets. Each of the magnets had already passed a stringent series of individual tests before being installed in their final places.

The magnets and their interconnections were sealed in vacuum insulation, similar to that in a thermos bottle, to keep the cold from leaking out. About three weeks ago, the last joint was welded shut in the stainless steel piping which seals the insulating vacuum.

Using special techniques developed at BNL, the vacuum system was then checked for leaks. When the vacuum pumps were turned on, the vacuum reached satisfactory levels in less than two days. The vacuum in the best thermos bottle is about 10^{-2} torr, or one hundred-thousandth of atmospheric pressure. That kind of pressure is fine for keeping iced tea cool, but to keep the CBA magnets at their operating temperature, the vacuum in the space surrounding the magnets must be about 1000 times better than that in a thermos bottle. At 10^{-7} torr, the actual vacuum attained is 100 times better than what is required.

With vacuum established, the task of cooling 45 tons of magnets began. Despite the Lincoln's birthday snowstorm, which delayed deliveries of liquid nitrogen by 24 hours and knocked out power to vacuum pumps and the refrigerator for 14 hours, the cooldown was completed in one week.

Once the magnets were at their operating temperature, preparations began for sending approximately 4000 A of electrical current through their windings. The power supply and its system of safety interlocks was checked. And the "quench protection" circuitry was tested for proper operation. This important system turns the

(Continued on page 2)

Another Milestone

The full cell test in the CBA tunnel was actually the second major milestone passed by that project last month. The first occurred in Bldg. 902 on February 20, when dipole LM-21 became the eighth full-size magnet to successfully pass all tests for field quality.

Like the other milestone, this achievement came early — almost six weeks before the date established by the original R&D schedule. "In its own way, this test was as critical as — perhaps more critical than — operation of a full cell," said Erich Willen, who heads the Magnet Measuring Group. "Reaching full magnetic fields is certainly important, but at the same time, the uniformity of those fields within the magnets must meet certain standards. We promised that, by April 1, we would have built ten magnets specifically to meet even more rigid standards than those required, and that eight out of ten would pass the tests. LM-21 was the ninth dipole built with this in mind, and eight out of nine have passed these very rigid requirements."

BNL Lecture

A Date With History

In a Brookhaven Lecture entitled "The Frobisher Voyages, and the Turin Shroud," senior chemist Garman Harbottle will talk about the fundamentals of the minicarbon 14 dating technique which has generated worldwide interest for its potential in art-historical research. Harbottle will speak at 4:30 p.m. on Wednesday, March 16 in Berkner Hall.

Produced in the atmosphere and incorporated into living matter, the carbon 14 present in antiquities (bone, wood, cloth) can be measured to obtain the "date" of these objects which once contained living matter. Harbottle will compare the methods used to measure carbon 14 in tiny samples — Brookhaven's counter technique and the accelerator method developed elsewhere. The BNL work on proportional counters miniaturized the process and made possible the dating of 10 milligrams of carbon, a far cry from the conventional requirement of 1 - 20 grams.

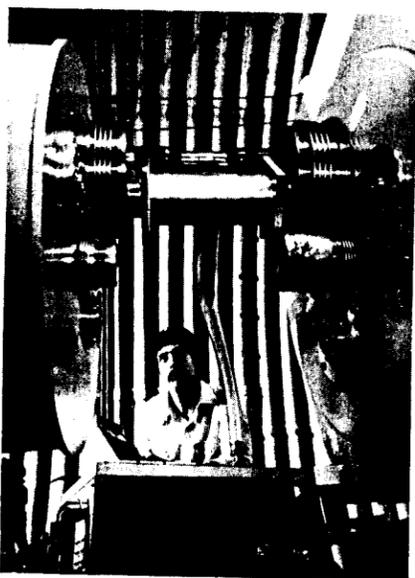
Harbottle will discuss the project which provided motivation and funding for the minicarbon 14 method. This was the dating of the "Frobisher iron bloom" — a lump of raw iron found in the Canadian Arctic in the 1860s and sent to the Smithsonian Institution. Named after the Elizabethan Arctic explorer, Sir Martin Frobisher, the bloom was placed by the minicarbon 14 method in the 12th century. This surprising outcome led to an expedition to Baffin Island in 1981 in which Harbottle participated. He will show slides of this trip. Three more iron blooms were discovered and one of these was recently dated by BNL.

Harbottle will also illustrate the potential of this method in art-historical research with further examples, the latest being the possibility of authenticating the religious relic, the Shroud of Turin.

Gar Harbottle obtained his Ph.D. from Columbia University in 1949 and has been a staff member of the BNL Chemistry Department since that date. He had a postdoctoral fellowship at Cambridge University from 1951-52, and a Guggenheim there from 1957-58. In the mid-sixties, Har-

bottle was on leave for two years at the International Atomic Energy Agency in Vienna where he was director of the Division of Research and Laboratories. Among his research interests are radiochemistry and the application of nuclear techniques to archaeology and fine arts. He is a member of the Suffolk County Vanderbilt Museum Commission, and a trustee of the William K. Vanderbilt II Museum and Planetarium.

A coffee reception will be held at 4 p.m. preceding the lecture and a buffet supper at 6:30 p.m., approximately an hour after the lecture. The price of dinner is \$7.50 and reservations should be made by calling Ext. 3541 before 5 p.m. that day.



Dan Wilson checks the interconnections between two magnets.

cell were chilled to 4.1 degrees Kelvin. Superconductivity, the feature that distinguishes these magnets from ordinary electromagnets, is a state in which no electric power is required to keep electric current flowing through the magnets. To be superconducting, the magnets must operate at incredibly low temperature — about 4 degrees above absolute zero. While 4.1°K approaches the desired temperature, in actual operation, CBA's magnets will be even colder — at most 3.8°K — the equivalent of -451°F. The full test was limited to 4.1°K by the capacity of the R&D refrigerator; the cryogenic system designed for the final accelerator will maintain its 1,080 superconducting magnets at temperatures 3.8°K and lower.

Despite the higher temperature, the magnet current rose to the level required for normal operation by 9:30



Garman Harbottle

Doug Humphrey



Doug Humphrey

The seven who did not have a sick day in 20 years are, from left, Phil Miller, William Lebitski, Patrick Glynn, Robert Walton, Victor Bond, Henry Boomer and Blair Munhofen.

20 Years Without A Sick Day

They may have had a stomachache, or the sniffles, or whatever, but still they came to work. And, for 20 years, seven people at the Lab did not take one single sick day. The record-holders are Victor Bond (Director's), Henry Boomer (Plant Eng.), Patrick Glynn (Staff Services), William Lebitski (Supply & Materiel), Phil Miller (Plant Eng.), Blair Munhofen (Chemistry), and Robert Walton (Photo. & Graphic Arts).

Nobody started out to break any records, nor did they try for one as the years went by. According to Pat Glynn, "I never gave it a thought until I got a letter from the director."

As noted by Bond, "work seems to be our common denominator." "Even if you don't feel well, getting up and going to work takes your mind off your illness," said Henry Boomer. He noted that Phil Miller came to work for two weeks with laryngitis. "I couldn't talk," said Miller, "but I could work." Lebitski commented that if you take too many days off, you only come back to work that has accumulated, and you may never catch up. So

taking sick leave for the sniffles isn't worth it to him.

Outside of the work ethic, there are few parallels. Some of the men are smokers. Some make it a point to take regular vacations, others only take a day or two here and there. A few work outside a lot and, Bond, for instance, swims the year round. However, several have no regular exercise program.

Blair Munhofen says he is physically active, but has no particular diet, and thinks the main reason for his health is that he was "blessed with a good set of genes." Walton notes that, as a child he had mustard plasters applied when he had a cold, and "perhaps I didn't want to have that experience again." But, for the most part, he thinks that "a good family life" has a lot to do with his staying healthy.

Recently, the seven received a congratulatory letter from the director which suggested that they go out to dinner and put it on the Lab's tab. When asked if they'd chosen a restaurant yet, one slyly said that he was thinking of a great little place in Puerto Rico.

Full Cell

(Cont'd)

power supply off if a magnet stops being superconducting and starts heating up, a phenomenon called "quenching" or "going normal." Although each magnet is capable of absorbing the magnetic energy it contains without damage, it cannot absorb additional energy from other magnets, or from the power supply. To prevent this, each magnet contains a passive high power diode which diverts the current from other magnets around it if it quenches, and the quench protection circuit quickly disconnects the power supply from the cell.

On February 17 and 18, the first two attempts to power the cell were made. However, some unexpected problems with electrical circuitry caused the system to shut itself off automatically, at 3000 A each time. Several changes were made to correct the problem, and the third test began at 7 a.m. last Friday. No magnet quenched, no temperatures rose. All remained calm. All, that is, except the scientists, engineers and technicians, who had worked so hard to make the test a success.

The full cell operated smoothly for over four hours. At the end of that time, said Per Dahl, physicist with the CBA Magnet Division, "the field was tweaked up another 100 A — to see how high it would go." At 4.1°K, the string reached 3860 A before quenching near the expected quench current.

Various tests will be performed on this cell throughout the spring. The magnets in this string are painted yellow because protons will circulate through them in a counterclockwise direction. The clockwise ring will be populated by blue magnets. By mid-summer, eight blue magnets will be installed parallel to the yellow string for later tests of two-cell operation.

— Anita Cohen

Arrivals & Departures

Arrivals

Armando Antillon Accelerator
Robert J. Cooney Plant Eng.
Jody L. Edwards Plant Eng.
Robert E. Eich Applied Math.
Paloma Lopez Biology

Departures

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

Wesley L. Howell Plant Eng.
Robert J. Maglione Accelerator
Frank J. Pachinger Central Shops

Water Workshop

Ground water is the sole source of drinking water for Nassau and Suffolk Counties. For this reason, many studies have been done on hazards to ground water and management of ground water supplies.

On February 24 and 25, a workshop on applying quality assurance to ground water data was held at Brookhaven "to get all these people on Long Island talking to each other," in the words of Janakirim Naidu, one of the workshop organizers. Naidu says with all these different studies, there is not a consensus on how to gather data and how to interpret the numbers. He also points out that each agency does its analysis from a different perspective, according to its own requirements. "We are interested in how these agencies collect, analyze, store and use the ground water quality data they routinely collect. Such information is being used by us for an EPA-sponsored ground water project. It behooves us to understand the problems associated with this information, as well as the ways in which each agency uses its own data," he says.

The BNL ground water project is

Investment Options Performance Summary

In February of last year Mutual Funds were added as investment options for voluntary employee tax-deferred contributions under the AUI retirement program. In order to provide Laboratory employees with up-to-date information concerning the various investment opportunities available under the AUI retirement program, the Personnel Division compiled performance records for the Fidelity and T. Rowe Price funds, and the TIAA-CREF Regular and Supplemental Retirement Annuities for the ten month period ending December 31, 1982. The following comparison shows the value as of December 31, 1982, for each account with a monthly contribution of \$100 starting March, 1982.

Value on 12/31/82 of Monthly Contributions of \$100 Started 3/1/82*

Past performance, (hypothetical accumulations with dividends and capital gains reinvested and all expenses deducted). Security prices can fluctuate considerably and these yields should not be considered representative of future earnings.

TIAA-CREF	Fidelity	T. Rowe Price
TIAA (Regular) \$1062	Asset Investment Trust \$1300	Growth Stock \$1215
CREF (Regular) 1199	Cash Reserves 1053	New Era 1183
TIAA (SRA) **1046	Corporate Bond 1159	New Horizons 1302
CREF (SRA) **1181	Contra 1138	New Income 1132
	Equity-Income Trust 1224	Prime Reserve 1050
	Fidelity 1248	
	High Income 1216	
	Magellan 1387	
	Puritan 1214	
	Thrift Trust 1122	
	Trend 1180	
	U.S. Govt. Reserves 1045	

*Total gross contributions for period \$1000.

**Requires front end load charge of 1½% from each contribution.



Alex Reben

On February 17, representatives from Nuclear and Genetic Technology, Inc. (NGT) came to BNL to learn more about the Medical Department's radionuclide and radiopharmaceutical research program. The Long Island-based company is particularly interested in the radio-labeled monoclonal antibodies developed in this program. These antibodies have a high potential for application in the diagnosis and therapy of cancer and other diseases. The visitors toured Building 801, the Linac and the HFBR, facilities where radionuclides are developed or made. Pictured at the Linac are (from left) Donald Anthony, Case Western Reserve University, scientific advisor to NGT; Barry Goldwater, Jr., consultant to the company; John Scarpino, NGT chairman; Virginia Frazier, NGT executive vice-president; BNL's Powell (Jim) Richards, head of the radionuclide program, and Andrew McNerney, Accelerator Department.

jointly headed by Naidu, Safety and Environmental Protection Division, and Edward Kaplan, Department of Energy and Environment. The study will produce a handbook which can be used by agencies both in the area and across the country to develop a system to analyze and manage their

ground water supplies.

Over 50 attendees were at last week's workshop, including representatives from the Nassau County Department of Health, Suffolk County Department of Health, New York State Department of Environmental Conservation, and the U.S. Geological Survey.



Doug Humphrey

Participants in the recent workshop on the application of quality assurance information to ground water monitoring data were (from left) Edward Kaplan, DEE; Janakirim Naidu, S&EP; Anne Meinhold, DEE; Michael Hauptmann, DEE; and James McNabb, EPA project manager for the BNL ground water project.

BROOKHAVEN BULLETIN

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BERA Election

During the week of March 14-18, on-site employees will be invited to cast their ballots in this year's BERA Board election. Voters will select two candidates from the slate of four to replace Dennis Klein and Rosalie Piccione whose terms as BERA trustees expire on April 30.



Ken Sutter



Mickey Haller



Harriet Fadem



Betty Pergan

Candidates' credits:

Harriet Fadem — Sr. Librarian, Technical Information Division. Although Harriet is not a member of any organized BERA activity, she supports the recreation program by her frequent attendance at BERA concerts, dances, plays, and other special events.

Mickey Haller — Assistant Buyer, Contracts and Procurement Division. Mickey served as softball league representative and team secretary. She was a bowling team captain for two years and is a member of a mixed league volleyball team.

Betty Pergan — Sr. Staff Specialist, Department of Energy and Environment. Betty is a member of the Special Events Committee and was selected by the BERA Board to serve on the 1983 Nominating Committee. When volunteers are needed to sell tickets for BERA events, Betty is always willing to lend a helping hand.

Ken Sutter — Technical Specialist, Department of Nuclear Energy. Ken is a member of the Special Events Committee and the BERA Dance Committee. He is very active in softball and volleyball, having served as a governing board member in both organized leagues.

Voting Schedule

Mon.	3/14	Cafeteria	11:30- 1:00
Tues.	3/15	"	" "
Wed.	3/16	"	" "
Thurs.	3/17	"	11:30-12:30
"	"	Bank	1:00- 2:30
Fri.	3/18	Bank	10:00- 2:30

Absentee votes will be accepted from employees who will not be on site during voting week. Ballots in the form of signed memos with candidate selections should be sent to BERA Board President Nelson Tyler, Building 211. In order to be valid, absentee votes must be received by noon on Friday, March 18.

NYC Train Trip

The Hospitality Committee is planning a group railroad trip to New York City on Wednesday, March 16. Departure will be at 7:55 a.m. from the Patchogue LIRR station. Round-trip fare for adults is \$3.50; children under five years ride free.

Reserve a ticket by sending your fare through the U.S. mail to Hospitality Committee, P.O. Box 322, Upton, New York 11973. Please do not send cash. Checks or money orders, payable to BNL, must be received by Thursday, March 10. Put the date of the trip, your BNL life number and your phone number on the back of your check or money order. Your tickets will be given to you at the railroad station on the day of the trip. Refunds will be made only if cancellations are received by the Monday morning preceding the trip.

Microcomputer Club

A demonstration will be given by Daily Business Products on Thursday, March 10, from noon to 1 p.m. in the Biology library (Bldg. 463). Among the equipment to be shown will be the Qantex Printer Model 7030 (a multi-mode impact).

Contact Jim Hainfeld, extension 3372, for more information.

Volleyball

Results as of 2/28: Mixed League

A Division:

Mixed Ups swept all three from the EPO's to win the third quarter; 15-13, 15-10, 15-10. Teddybears over Nuts and Bolts; 15-5, 15-7, 15-11. The Dinkers and Nuclear Wastrels cancelled their games till a later date.

B Division:

Semi Tough	14- 4
Phoubars	12- 3
TNT	11- 4
Up Fagrabs	11- 4
Chungas Revenge	7-11
Nuke Yorkers	7- 5
Puff and Stuff	7- 5
Screwballs	3-12
KMA	2-10
Quirks	2-10

Open League

Phoenix took 4 over the Half Lifes. FRED and Random Errors each took 2. Raiders took 4 over the Brewmasters.

Music Project At BNL March 17

The Music Project, an instrumental ensemble, will present a concert on Thursday, March 17, at 8:30 p.m. in Berkner Hall.

The Music Project is a group of young musicians dedicated to performing chamber music of diverse periods. The players can be organized into smaller groups to cover most of the instrumental combinations in the chamber music repertoire.

On the program for March 17 will be three works that span over 150 years of chamber music. Franz Schubert's Octet in F was written in 1824; Carl Nielsen's Quintet-Serenata in Vano

was written in 1914; and Robin Holloway's Serenade in C, Op. 41, an octet, was composed in 1979.

Performers for this concert will be Steve Hartman, clarinet; Ethan Bausch, bassoon; Stewart Rose, French horn; Setsuko Nagata, violin; Elena Barere, violin; Sally Clark, viola; Vivian Barton, cello; and Joseph Bongiorno, string bass.

Tickets may be purchased at the door on the night of the concert. General admission is \$7; students and senior citizens, \$4; and those under 18, \$3.



The Music Project

Join In The Rites Of Spring

The silhouette of the lovely lady in last week's Bulletin proved too difficult for most readers to identify. Only one correct answer was received, so Sharon Hoeffner is the sole winner of a pair of free tickets to the BERA Spring Fling. Her prize-winning guess? Janet Sillas will sing "Second Hand Rose" as her part in the "Rosebud Revue."

Joining Janet on the stage in Berkner Hall will be the

Toni Reams Dance Company, pictured here. Joe Indusi will be Master of Ceremonies for the "Forsythia Follies," which will also feature Neil and Penny Baggett in a skit about the Great Train Robbery, the satire of Karl Swyler, the musical talent of Pat Towey and the harmony of The Atom Smashers barber-shop quartet.

Before and after the show, visit the Blossom Ballroom where Charlie Zein and the Newporters will hold court, or boogie down to the Daisy Disco, where Mr. T. (Eddie Taylor) will be playing your favorites.

While enjoying the cash bar and food concessions, you can anticipate the drawing for the novel door prizes donated by various BERA clubs. Who will win that ride or lesson from the Motorcycle Club during their Spring Tune-up? What lucky pair will go to dinner at the Mushroom Cap, compliments of the Volleyball League? Who will enjoy the Tennis Club's contribution of a bottle of cheer? Who will have a chance to try the recipes in the cookbook donated by the Cooking Exchange?

Tickets for all of this are only \$3 each and will be on sale at lunchtime in the Cafeteria next week. They are now available from any of the ticket sellers previously listed in the Bulletin.



Cooking Exchange Bowling

White League

M. Apelskog bowled a 199, D. Miesell 186, M. Stoeckel 185/176, E. Adams 178, K. Cody 171, J. Griffin 248/225/214 for a 687 scratch series.

Purple League

High games were bowled by E. Meier 255, 210, 606 scratch, D. Hall 223/214, 617, G. Spira 213/601, E. MacDougall 211, K. Jellett 236, B. Benson 226, K. Riker 218, J. Mayeski 211, A. Pinelli 202/205.

Red/Green League

T. Holmquist rolled a 243, R. Adams 227, E. Sperry IV 212, K. Asselta 210, E. Meier 201, A. Pinelli 204/202/600 scratch series.

Pink League

C. Beckner rolled a 190, D. Johnson 178/174, J. Thiede 171/160, H. Keeley 161, R. Rosati 160, S. Long 160.

Entry forms are still available at the BERA Sales Office for the Scotch Doubles being held Sunday, March 13, 2 p.m. at the Port Jefferson Bowl.

Cafeteria Menu

Week Ending March 11, 1983

Monday, March 7

Spinach egg drop soup	(cup)	.65
	(bowl)	.75
Broiled chicken livers & 1 veg.		1.75
Beef stroganoff on egg noodles		1.95
Hot Deli — Roast turkey breast	(bread)	1.85
	(roll)	1.95

Tuesday, March 8

Lentil soup	(cup)	.65
	(bowl)	.75
Veal scallopini & 1 veg.		1.90
Swedish meatballs on egg noodles		1.85
Hot Deli — Sandwich steak		
w/ peppers & onions	(bread)	1.95
	(roll)	2.05

Wednesday, March 9

French onion soup w/ croutons	(cup)	.65
	(bowl)	.75
Salisbury steak & 1 veg.		1.85
Southern-fried chicken & 1 veg.		1.90
Hot Deli — Sausage & pepper hero		1.95

Thursday, March 10

Turkey noodle soup	(cup)	.65
	(bowl)	.75
Sweet & sour pork on rice		1.95
Pot roast of beef		
w/ oven roasted potato		2.00
Hot Deli — Monte Cristo		1.90

Friday, March 11

Manhattan clam chowder	(cup)	.65
	(bowl)	.75
Shrimp, fries & cole slaw		2.10
Beef hash & 1 veg.		1.85
Hot Deli — Clam boat		1.95

Classified Advertisements

Placement Notices

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

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

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

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

The vacancies listed below have been exempted by the Director's Office from the current freeze on open requisitions.

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

1833. **ELECTRICIAN A** - (two temporary positions) - Under minimum supervision lays out, constructs, installs, maintains, repairs and operates electrical systems, equipment, controls and related devices. Requires minimum of five years' industrial electrician experience. Plant Engineering Division.

Autos & Auto Supplies

VW PARTS - Bug muffler, compl., \$28; Rabbit muffler, \$36; VW tow bar, \$37.50; Bug bumpers, \$27; Bosch plugs, \$.95/ea.; 044 points for most Bugs, \$1.50; all parts are brand new. Augie, Ext. 2419 or 325-0594 eves.

65 **LEMANS CONVERTIBLE** - 326 eng., a/t, bucket seats, primed, ready for paint, excel. cond., asking \$1,400. 588-7648.

78 **MERCURY BOBCAT** - 70,000 mi., some body damage, needs valve adjustment, asking, \$1,100. 435-8650.

75 **TOYOTA COROLLA** - auto., new radials, new paint, am/fm stereo, very good cond., \$2,100. Ext. 3565 or 878-2233.

79 **FORD WINDOW VAN** - p/s, p/b, auto., 302 V8, capt. chairs, fully carpeted, asking \$5,400. 363-6845.

76 **HONDA CIVIC** - 4 spd., new tires, great running cond., asking, \$1,500. Ext. 2520 or 369-2051.

73 **MERCURY** - Marquis wagon, V-8, rebuilt trans., air shocks, H.D. cooling, IV hitch 120K, runs good, \$600. John, Ext. 3675 or 924-3528.

77 **CHEVY** - Suburban, K-10, 4x4 Silverator, p/s, p/b, a/c, loaded, no rust, excel. cond., \$5,200. Paul, 727-4859.

79 **FORD** - F-250, 4x4 Ranger XLT, cap, spoke wheels, am/fm, dual batteries, helper springs. 475-1388, evenings.

GM WHEELS - 15" (5), hole w/caps, \$10 ea., 5/\$45; Sears, BR70XB, new, \$25. Dave, Ext. 5211.

68 **CHEVY-PICKUP** - 6 cyl., 3 spd., new snows and engine, \$900. Jim, Ext. 3762.

76 **FIAT** - 131S, 5 spd., 2 dr., a/c, 26 mpg, asking, \$1,300. Ext. 2521 or 928-8379.

71 **JAWA CZ** - 400cc, dirtbike, excel. cond., extras, asking, \$700. Al, Ext. 2011 or 325-0209.

70 **PONTIAC** - Firebird 400, auto., many new parts, new tranny, very good cond., Roger, 286-1882.

80 **SUZUKI** - GS1000L, lugg. rack, custom seat, c/c, mint., must sell, asking, \$2,500. Ext. 7187 or 981-9474.

80 **DODGE D50** - 2600cc, 4 cyl., auto., 25 mpg, rollbar, stacks, asking, \$5,500. Matt, Ext. 4173 or 331-9424.

PLYMOUTH ENGINE - 318 C.I., will demonstrate, \$250; 904 torque flite, \$75; 396 Chevy solid lifter camshaft w/lifters 510" lift, \$40; chrome valve covers, \$15; 396 closed chamber heads, new valve job, double valve spring, never ran, \$150; 12 bolt posi for Chevelle, \$125; 4 chrome factory mags, \$60. John, Ext. 3869.

81 **CAMARO Z28** - mint. cond., blue, a/c, p/s, p/b, cassette stereo w/equalizer, sport wheels, must see, priced to sell. 273-8998.

76 **AMC PACER** - a/c, p/s, p/b, good cond., avail. mid-March, \$1,600. Robert, Ext. 4768 or 3030.

REDUCE AUTO INSURANCE! - Page Alert 4000 security system, new unit w/motion detector, \$45. Richard, Ext. 4613.

81 **MERCURY** - Capri GS, 32,500 mi., 4 cyl., a/t, sunroof, am/fm, 8 track, radials, black/red int., excel. mpg, \$5,500 neg. Ken, Ext. 2350 or 732-7944.

46 **DODGE PICKUP** - numerous spare parts, complete, for restoration, \$750. Jim, Ext. 3762.

79 **HONDA MOTORCYCLE** - CM400T, 2,000 mi., garaged, must sell, \$1,000. Ext. 7125.

66 **BSA MOTORCYCLE** - 441cc Victor, very fast, classic British single, \$441. Frank, Ext. 2022 or 399-4480.

82 **KAWASAKI** - KZ550 LTD, 4,200 mi., mint cond., \$2,175. Craig, Ext. 4289 or 732-6489.

72 **PLYMOUTH FURY III** - 4 dr., hard top, \$600. Ext. 2314 or 567-5131.

79 **PLYMOUTH HORIZON** - a/t, low mileage, excel. cond., good mpg, must sell. 924-7723.

76 **BELAIR** - 4 dr., a/t, p/b, p/s, am/fm, 6 cyl., \$1,500. Fred, 399-1748.

74 **DATSUN 260Z** - a/t, a/c, rear defroster, am/fm stereo, spoke rims, runs good, asking \$3,495. 289-2381.

82 **MAZDA SUNDOWN PICKUP** - a/c, cap, am/fm, 5 spd., 29 mpg, \$7,695. Janet, 929-4439.

RIMS - set of 4, 15", for Chevy Monte Carlo, \$80. Steve, Ext. 4297.

65 **BUICK LASABRE** - 4 dr., excel. cond., many new parts, asking \$700. Steve, Ext. 4297 or 929-6877 after 5:30 p.m.

75 **TRIUMPH** - TR6, good cond., \$2,700. Ext. 5053 or 472-1735 after 6 p.m.

74 **MONTE CARLO** - am/fm cassette stereo, new paint, good cond., \$1,900. Sharon, Ext. 7008 or 722-8019.

71 **FORD MAVERICK** - a/t, p/s, good running cond., body rust, dented, \$200. Ext. 7505 or 689-8605.

MOTORCYCLE TRAVEL TRUNK - ABS plastic, black, 20"x17"x12" with locks & reflectors, \$45. S. Wingard, Ext. 4749.

66 **VW VAN** - parway windows, sunroof, engine needs work, \$175. Keven, 281-8031.

76 **CHEVY CAPRICE CLASSIC** - 4 dr., a/c, am/fm, p/s, a/t, tilt wheel, doorlocks, \$1,000 firm. 736-4822.

74 **DUSTER** - a/t, p/s, p/b, 6 cyl., excel. cond., \$1,100. Saha, Ext. 4339 or 924-6139 eves.

80 **HONDA HAWK** - Sport Model CB400T, excel. cond., low mileage, extras, \$995. 286-8814 after 5:30 p.m.

77 **PONTIAC FIREBIRD** - red, V8, p/s, p/d/b, a/c, am/fm cassette, mags, 69K mi., \$3,250. 589-5126.

79 **CHEVY** - sd, p/s, a/c, Mabue, 4 dr., am/fm cassette, \$2,500. 473-8716.

70 **VW CAMPER** - rebuilt engine & transmission, 40,000 mi., \$1,700. John, 727-1571 eves.

78 **HONDA MOTORCYCLE** - 750cc, excel., garaged, new tires, 11,000 mi., many extras, \$1,350. John, 727-1571 eves.

71 **CHRYSLER NEWPORT** - good running cond., excel. body, a/t, a/c, p/b, p/s, \$450. 732-3105 eves.

78 **HONDA MOTORCYCLE** - 750K, custom seat, handlebars, sissy bar, mint, 11,000 mi., asking \$1,500. Dan Russo, 732-5620.

78 **FORD FIESTA** - 56,700 mi., very good cond., \$2,000. Ext. 7192.

81 **HONDA EXPRESS MOPED** - used one season, runs excel., 120 mpg, \$250. 878-1698.

76 **VW RABBIT** - 4 spd., 30+ mpg, well maintained, worth a look, very good cond., \$1,495. Chip, Ext. 2256 or 928-5836.

73 **MAZDA PICKUP** - new tires, am/fm stereo, runs good, clean, w/cap, asking \$2,500. 473-8716.

71 **COUGAR** - excel., 351, a/t, p/s, a/c, snows, dk. green, \$1,695. Ext. 5141 or 567-3922 after 6 p.m.

71 **HONDA MOTORCYCLE** - CB500, 4 cyl., electronic ignition, Shooei saddle bags, farring seat, sissy, crash, \$800. 744-8901.

81 **SUZUKI MOTORCYCLE** - RM125, excel. cond., like new, \$850. Jim Jr., 929-4136 eves.

81 **SUZUKI MOTORCYCLE** - 550GL, 3,000 mi., frame bent, \$700. 734-6415 after 6:30 p.m.

75 **CHEVY IMPALA WAGON** - 9 pass., a/c, p/s, p/b, good cond., \$1,350. 286-8799.

66 **PLYMOUTH VALIANT** - 7,600 orig. miles, runs excel., needs body work, \$325. Ext. 7698 or 473-5776.

73 **AUDI FOX** - 4 dr., 4 spd., std. mech., rubber good, \$800 neg. Henry, Ext. 3050 or 588-3999.

79 **MAZDA** - 626, 2 dr./sc, excel. cond., 5 spd., met. blue, rust-proofed, 30-35 mpg, \$4,750. Larry, Ext. 4107 or 472-0721.

CHROME RIMS - (2) Plymouth 14" slotted + hubs; (1) F70-14 white lettered, mounted tire, \$20. 744-3141.

77 **FORD LTD II BROUGHAM** - black/silver, buckets, many extras, \$2,400. Rich, Ext. 7932 or 289-4561 after 8 p.m.

71 **VOLVO STATION WAGON** - 145S, new engine, clutch, exhaust, 4 spd., dk. green, \$2,200. Reagan, 473-8036.

79 **FORD WINDOW VAN** - privacy glass, p/s, p/b, 302 a/t, fully carpeted, asking \$5,400 neg. 363-6845.

TRAILER - 1 ton, utility, heavy duty, 6' wide x 7' long bed. Bob, Ext. 2957 or 878-4556.

AMPLIFIER/EQUALIZER - Pioneer AD-50, 50 watts total power, excel. cond., \$90 or best offer. 744-8063 days.

79 **CHEVETTE** - 2 dr., 4 spd., a/c, very good cond., 30 mpg, \$2,500. 473-2473.

Boats & Marine Supplies

12'6" **WINSURF** - fiberglass, new at my cost. Dinos, Ext. 4666 or 477-1783.

26' **PACEMAKER** - depthfinder & recorder CB, rebuilt motor, 1981 350 Chevy motor, flying bridge, sleeps 4, am/fm stereo, \$2,500. Ext. 3319.

GALVANIZED TRAILER - 1982 Highlander, 1975 Sears 12' V-bottom alum. boat, 6 hp motor, anchor, dars, \$650 firm. 281-1840.

OUTBOARD MOTOR - Sears, 7-1/2 hp, excel. working cond., \$175. Joe, 744-3509.

12' **ALUM. SEMI-VEE** - Sears, like new, \$375 neg. Joe, 744-3509.

20' **CLAM BOAT** - w/Telflex steering, cabin, no motor, \$500. Bob, Ext. 3084 after 5 p.m.

17' **THUNDERBIRD** - cathedral hull, 90 hp Mercury, Trailax alum. trailer, asking \$2,000. Borg, Ext. 3568 or 286-0428.

16' **TRI HULL** - fiberglass Thunderbird, 45 hp, fully equipped w/trailer, top, jackets, radio, etc. Charlie, 727-4539 after 6 p.m.

Garage Sales

GARAGE SALE - March 5-12, furniture, household items, tools, furniture like new. 96 Woodlot Road, Ridge, 924-4461 or 732-9317.

GARAGE SALE - furniture, books, clothes, records, tapes, lots of misc., no junk, 3/s, Long Pond Rd., Wading River. Ext. 3565.

Miscellaneous

NEON SIGNS - Lowenbrau & Miller beer, for the hobbyist or home bar, \$10 ea. Rich, 363-6845.

ATWATER KENT RADIO - in antique table, make offer; typewriter, old standard office type, good cond., \$15. Mac, 929-3455.

MET TICKET - Walkurie, March 21, 7 p.m., \$27. Ext. 3927 days or Ext. 3209 eves.

COLOR TV - Sears, 25", \$125; stereo console, \$100. Ext. 4028 or 981-4419.

BEDROOM SET - white provincial, twin bed, double dresser, nightstand, \$150; maple rocker, excel., \$25. 286-1097.

SANYO TV - 13", b/w, 9 mo. old, asking, \$50; GE 19" color TV w/remote control, 1 yr. old, asking, \$430; Corona DKB kerosene heater, 22,600 heating cap., 55 gal. drum, 5 gal. can and electric pump, \$150. Ext. 3827 or 981-9584 eves.

STEREO - Centrex KH-7666, Pioneer, am/fm, w/turntable, 3 ways sp., cassette, excel. cond., \$200; canopy tent, camel, 12'x12', not used, \$25; bike, Motoxross, 20", \$20; kickboard for swimming, 2.5', \$10. Ext. 3883 or 3029.

SLEEPING BAGS - down, alpine designs, zip together, light, clean, \$65 pr. Dave, 5211 or 475-2626.

BIKE - girl's, 3 spd., good cond., \$35. Ext. 4752.

BED - queen sz., mattress, box spring and rails, brand new, \$100. Ext. 4743.

BATHROOM FIXTURES - sinks, vanity, cabinets, etc.; windows/doors, wooden, double hung, colonial w/storms, storm doors. Bob, Ext. 7785.

GRAY FOX - mounted in natural pose on log, \$125 firm. Bob, Ext. 3354.

SOFA - queen sz. sleeper, \$350; 6' decorator wall units, \$65 ea. Ext. 3565.

EASTER BASKETS - cloth, great to keep as decoration after Easter. Sharon, 878-4599.

35MM EXACTA - 50mm lens, 400mm lens, 35mm wide angle lens, 2x&3x teleplus lenses, light meter, \$125. Ext. 7772.

STEREO - solid wood console, excel. components, turntable, receiver, speakers, storage area, best offer. 878-2233 after 6 p.m.

ADULT TRICYCLE - rear basket, foldable, caliper brakes, single speed, \$70. Dan, 277-1284.

CLASSICAL ALBUMS - twenty 78 RPM albums, best offer. Dave, Ext. 3942 or 924-4968.

RADIO - LaFayette 40 channel citizen band, w/ant., \$25. Ext. 4613.

GUITAR - Yamaha FG 331, 6 steel string w/case, excel. cond., \$85. Bob, Ext. 3354.

TABLES - 3 Lane, walnut, good cond., coffee, square & step, \$150. Jerry, Ext. 7427 or 475-5591 after 6 p.m.

MET TICKETS - Don Carlo, Bumbry, Domingo, etc., Lab seats, Sat. Mar 12. Ext. 3788 or 286-3679.

STEREO CASSETTE DECK - Mitsubishi DT-640, Dolby noise reduction, metal tape compatible, solenoid controls, \$260; Technics, SLB-202 turntable, \$160, both for \$400; Yamaha, R-300, thirty watt per channel receiver and NS-4 speakers, asking \$460. Brian, Ext. 2311.

KEROSENE HEATER - RK100S, \$75; power lawn mower, \$65; Peugeot men's bike, \$60; rocking chair, \$40; pouffe, \$10; Bartolini furniture, brown canvas w/light pine, sofa, \$200; chairs, \$120; cocktail table, \$80; end table, \$60. 924-4250.

WALL UNIT - 6 cabinet door, 2 drawers, 1 glass door, lights, 101" h, 66" w, 21" deep, \$200. 281-7844.

DOUBLE BED - mattress, box spring & frame. Walt, Ext. 7154.

GOLDEN RETRIEVER PUPPIES - 8 weeks old, perfect, price according to pick. 231-8126.

BASS GUITAR - Hondo, 4 mos. old, \$120. George, Ext. 7772.

CAR SEAT - crib, playpen; sofa, bed; steel shelves and other items. Ext. 4339 or 924-6139 eves.

ELECTRIC RANGE - Tappan, copper color, excel. cond., \$175. John, Ext. 5171.

BULOVA LADIES WATCH - 14 kt. white gold, 6 diamonds, 23 jewel movement. Al Campbell, Ext. 2047.

UPRIGHT FREEZER - 10 cu. ft., excel. cond., \$160. Linda, Ext. 2733 or 878-8491 after 5:30 p.m.

COLOR TV - 24" Zenith in colonial maple floor console, excel. cond., \$150. 921-0548 eves.

ATARI CARTRIDGE - Star Raiders w/pad, \$20. Harold, Ext. 2332.

COLOR TV - 13" Hitachi, 1-1/2 yrs. old, \$200. Ext. 7192.

SYNTHESIZER - Multivox MX20000, excel. cond., \$500. 363-2614 after 6 p.m.

ICE SKATES - Reidell, boy's sz. 13, excel. cond., \$25; nursery lamp, \$7; child's Weather Tamer spring jacket, sz. 7, \$5. 473-6546.

SCARVES - pure silk and handmade silk. Ext. 3136.

CHAINSAW - 15" Stihl, excel. cond., \$100; refrigerator, old but runs well, \$20. Jimmy, Ext. 3499.

CORNER SINK - stainless steel, all equipped, \$30. Howard, Ext. 2000.

SKI PANTS - men's 34-R, dk. blue, wool & poly stretch, never worn, \$75. Ext. 4727.

COAL BIN - 3 ton, orig. \$150, now asking \$90, you haul. Carol, 289-3917 after 6 p.m.

WATERBED - \$100; picnic table, \$25; dinette set; table lamps. Ext. 3742 or 821-9423.

WING CHAIR - Chippendale style, excel. cond., \$100; bowling ball, 12 lbs., Brunswick, very good cond., \$15 including deluxe bag, sculptured rug, 12x15, green Karastan, excel. cond., \$170 including pad; wine fount, wrought iron, from Austria, never used, \$25. Kathy, Ext. 3652 or 744-5866 after 6 p.m.

SOFA BED - \$25; high chair, \$9; portable typewriter, \$20; 3" Skil belt sander, new, \$50; Craftsman sabre saw, like new, \$50. 878-6637.

SEWING MACHINE - Kenmore, new, \$150; Coleman metal cooler, \$20; car roof rack, \$20. 924-0582 eves.

BED - 3/4 brown tone head & foot boards, mattress & spring, \$35. Chris, 821-1704.

SOFA - refrigerator; pool table, \$75/ea.; washing machine, 1 yr. old, \$195; many other items, moving. Ext. 7727 or 929-4631.

BEDROOM SET - full size bed, armoire, triple dresser, good cond., asking \$300. 586-6963 eves.

DENIM JACKET - w/picture of Jim Morrison painted on back. Rose, 744-5069.

SEWING MACHINE - Singer, \$75; step stool, \$20; bookcase headboard, \$25; quartz heater, \$30; new toaster oven, \$45; 2 table lamps, \$25/ea.; electric knife, \$20. 744-6874.

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

BAYPORT - small authentic colonial, move-in cond., includes all major appliances, drapes, fixtures & some carpeting, 2-car garage, convenient to schools & shopping, low \$100's. 472-2633.

RIDGE - one acre bldg. plot, fully wooded, established residential area, minutes from Lab, \$13,900 w/short term mortgage. 924-3236.

STONY BROOK - 3 bdrm., Cambridge Colonial, 2-1/2 baths, 1/3 acre, fireplace, fenced backyard, covered patios (rear & front), \$89,900. 751-1425.