BROOKHAVEN BULLETIN
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BROOKHAVEN NATIONAL LABORATORY

BNL Device Helps Iron Out Questions About Ocean Nutrients

An oceanographic instrument designed and built at BNL's Department of Applied Science (DAS) recently helped confirm an important ecological theory on a research cruise in the southeastern Pacific, reaffirming the device's potential versatility for all oceanographers.

The instrument, called a fast-repetition rate (FRR) fluorometer, is the brainchild of Scientist Zbigniew Kolber, of the DAS Oceanographic and Atmospheric Sciences Division, who designed it two years ago with Senior Oceanographer Paul Falkowski. Now, a Texas company has agreed to manufacture it, and the oatmeal-canister-sized fluorometers have been used on several research projects around the world as tools for measuring the productivity of one-celled ocean plants called phytoplankton.

These microscopic organisms, abundant in almost every part of the world's oceans, absorb carbon dioxide (CO_2) and produce oxygen, making the ocean a vital "sink" for the carbon dioxide produced in vast quantities through the burning of fossil fuels.

But as crucial as phytoplankton are to the world's environmental balance, scientists have wondered for decades what factors cause some regions of the oceans to be rich with phytoplankton and others to have only sparse populations. Traditionally, these differences have been chalked up to light, temperature and nitrogen differences. But, several years ago, some oceanographers hit upon another idea: Iron could be the crucial, or limiting, nutrient.

Ironclad Experiment

To test this hypothesis in situ, Kolber and two dozen other oceanographers from around the world set out on a cruise to the Pacific Ocean around the Galapagos Islands last fall. Led by Duke University oceanographer Richard Barber, the cruise was planned by the Moss Landing Marine Laboratory in California. Several techniques, including BNL's fluorometer, were used to quantify the phytoplanktons' activity before and after the addition of iron.

The experiment began with the spreading of approximately two tons of ferrous sulfate, an iron-sulfur compound, over a 50-square kilometer area. Then, scientists monitored the results using various techniques. BNL's fluorometer detected an increase in the phytoplanktons' activity within one day, indicating that iron limitation had indeed been a cause of the area's low productivity.

Falkowski and Kolber caution, however, that this does not mean that fertilizing the ocean with iron could be a quick fix for the world's overabundance of CO_2, which is considered a major factor in global change and the heightening of the "greenhouse effect."

Instead, Falkowski said, the findings are important to understanding the potential effects of anthropogenic, or human-caused, global change on different biogeochemical cycles, and therefore on phytoplankton communities.

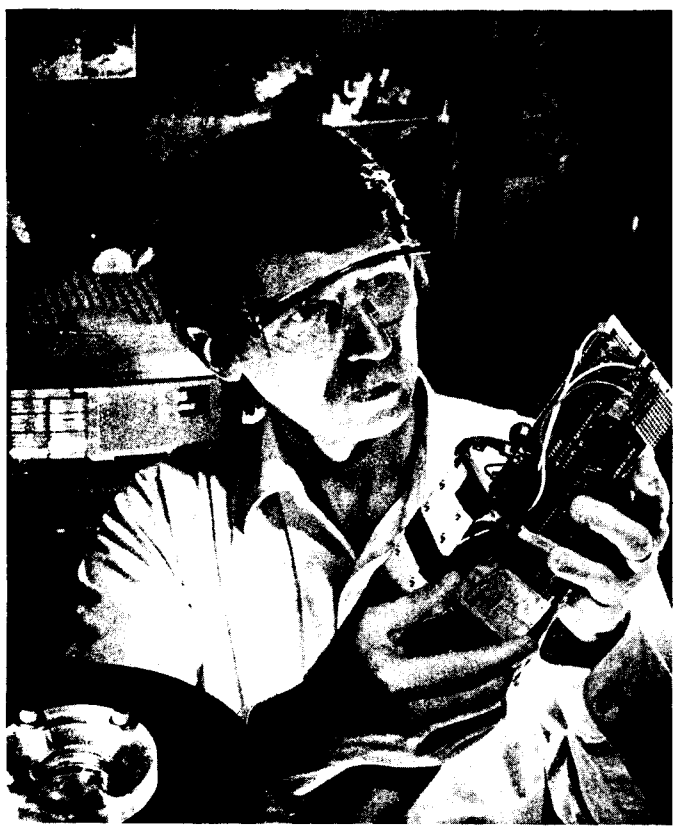
"You have to remember that biogeochemical cycles are linked," Falkowski said. That linkage, Kolber continued, is quite obvious in the case of phytoplankton and nutrients. "Iron is brought to the ocean by winds from land masses, so the change in the wind pattern resulting from global warming will modify the iron supply, changing the ocean's drawing of CO_2," he said.

Fluorometry & Photosynthesis

The FRR fluorometry is based on measurements of the fluorescence signal emitted by photosynthesizing plants: When plants convert sunlight and carbon dioxide to sugars and oxygen, a small portion of the absorbed

(continued on page 2)

This group of oceanographers from the United States, Canada, Chile, France, Italy and Japan met at BNL Monday and Tuesday this week to discuss the Sea Wide Field Sensor (SeaWiFS) oceanographic satellite, scheduled to be launched by NASA in June. Several BNL scientists in the Oceanographic and Atmospheric Sciences Division (OASD) of the Department of Applied Science hosted the conference, including Paul Falkowski (front row, far right), Michael Behrenfeld (back row, fourth from right), Zbigniew Kolber (in front of Behrenfeld) and Creighton Wirick, OASD head (back row, fifth from left). Among the conferees were: (behind Falkowski) Richard Barber, Duke University, who led the research cruise discussed in the accompanying story, and Wayne Esaias (front row, third from right), NASA SeaWiFS project scientist.



Zbigniew Kolber invented and designed the fast repetition rate fluorometer, a new oceanographic instrument that has already been used on research cruises worldwide.

Photos on this page by Roger Stoutenburgh

Commuting Survey Coming Your Way

How do you get to work in the morning? Do you bike, bus, carpool or vanpool — or are you part of the one-employee-per-car majority? Do you use a car to run errands at lunchtime or after work? Do you work at home, "telecommuting" by telephone and computer modem? Have you ever thought of joining a car pool but couldn't find one to join?

Whatever your commuting habits, you'll soon be asked to record them for a week as part of a Labwide survey. You will also be asked for your opinion of a variety of commuting options. Taken all together, the survey results will establish an average passenger occupancy (APO) for cars entering the Lab site and give a broad picture of employees' attitudes toward many different commuting options.

Why is this important? To comply with the requirements of the federal Clean Air Act, Long Island and other metropolitan areas must substantially

(continued on page 2)

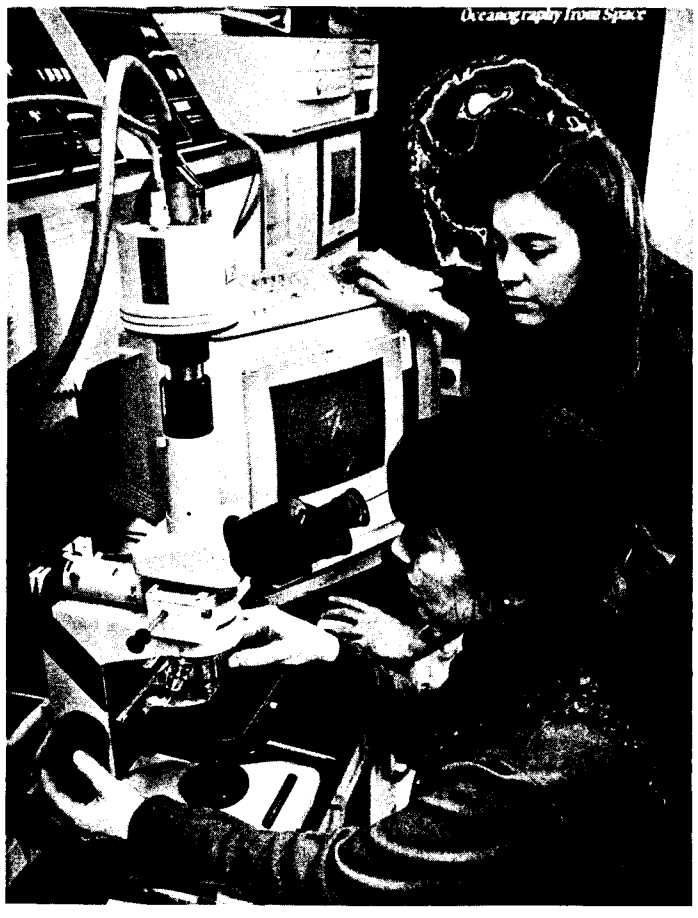
Phytoplankton Under Stress

When we're stressed, our hearts beat faster and beads of sweat form on our foreheads. But, when the tiny ocean plants known as phytoplankton are stressed for iron, they pump out flavodoxin.

In a Department of Applied Science (DAS) study related to the oceanographic project of Paul Falkowski and Zbigniew Kolber (see accompanying story), Associate Scientist Julie LaRoche of the DAS Oceanographic and Atmospheric Sciences Division and visiting graduate student Deana Erdner are examining exactly how various phytoplankton species respond to changes in iron levels in the surrounding water.

Using a phytoplankton antibody as a marker, LaRoche and Erdner, who is at BNL as a U.S. Department of Energy Global Change Fellow, have found that virtually all species of phytoplankton they've studied produce flavodoxin when ambient iron levels are low and repress the flavodoxin-producing gene when iron is artificially elevated or naturally high, as it is in coastal areas. The flavodoxin, a protein that does not contain iron, replaces ferredoxin, which does, and thereby relieves the phytoplankton's iron stress.

Now in its second year, the work currently concentrates on diatoms, phytoplankton that live in pillbox-like silica shells. Eventually, LaRoche said, oceanographers may be able to diagnose the health of the oceans' phytoplankton populations if a simple test for the presence of flavodoxin in water samples can be devised. —K.V.



Julie LaRoche (at microscope) and Deana Erdner examine diatoms, tiny ocean plants seen on the computer screen, for their reaction to low iron levels.

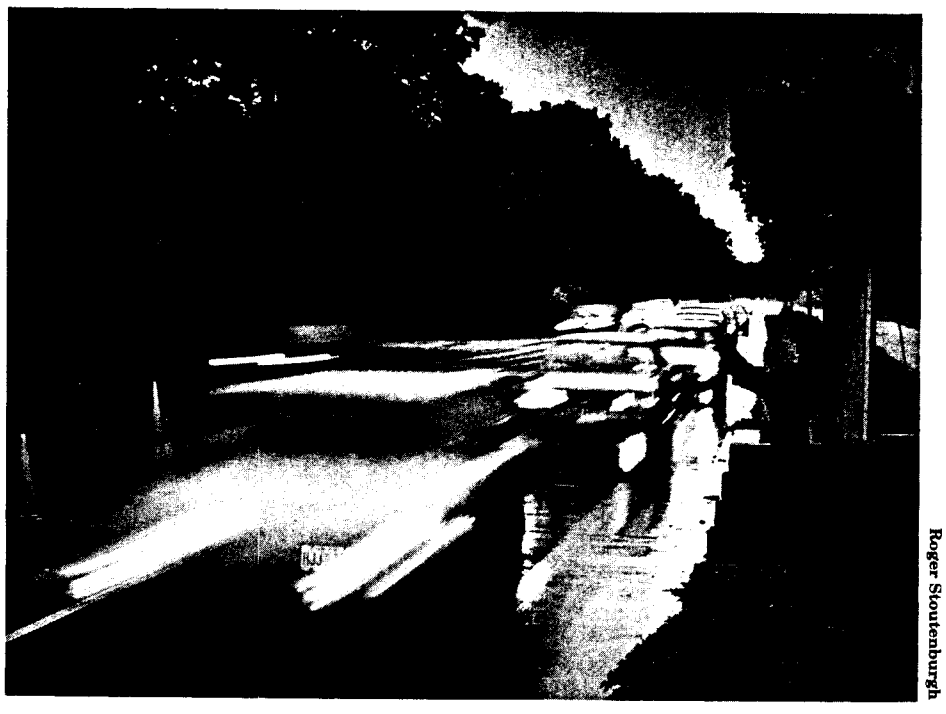
Survey (cont'd)

reduce their air-pollution output over the next several years.

Automobiles traveling New York metropolitan area highways currently produce almost 50 percent of the area's airborne carbon monoxide, and nearly 50 percent of the nitrous oxides and volatile organic compounds that contribute to the formation of ozone.

In the lower reaches of the atmosphere, known as the troposphere, ozone is a principal element of photochemical smog, and it can aggravate some people's respiratory ailments during periods of elevated concentrations. Therefore, reducing the number of single-occupant cars on the road during the morning rush is a good first step toward compliance with the Clean Air Act.

To accomplish this, the New York State Department of Transportation is requiring each employer of more than 100 people to increase the APO of the vehicles in their incoming morning traffic by 25 percent by November 1996. The target APO for Long Island is 1.46, equivalent to two people sharing the ride in every other car.



Roger Stoutenburgh

An upcoming survey of Lab employees' commuting habits is ultimately aimed at reducing morning rush hour congestion, seen here earlier this year at the Main Gate.

To meet this goal, BNL has appointed a working group, headed by Jeff Williams, Safety & Environmental Protection Division. Aside from conducting an employee survey, the working group must develop and implement an employee trip-reduction plan for the Laboratory.

"The results from the survey will help us identify viable alternative commuting options, which will later be developed through the trip-reduction plan," Williams said.

The survey — to be distributed February 7 and returned through Laboratory mail by February 22 — will ask employees not only for their modes of transportation, but also the total number of minutes their commutes take and their attitudes toward such things as car pools and alternative-work schedules. Once the responses are tallied, Williams said, a ride-matching database may be established to make joining a carpool more convenient.

— Kara Villamil

Winners' Circle

Employees with ideas for enhancing Lab safety or saving BNL money in areas outside their own job responsibilities should consider submitting their suggestions to the Employee Suggestion Program (ESP). ESP forms are available in department and division offices and through Personnel, Bldg. 185. An original idea could win 10 percent of the estimated savings, up to a maximum of $10,000.

Congratulations to the following BNLers who have entered the ESP winners' circle:

James Licari, a senior staff specialist for the RHIC Project, has been awarded $25 for his suggestion to remind employees of the availability of 800 Toll-Free Telephone Information Service — (800) 555-1212 — which BNLers are asked to use whenever possible to determine whether companies have a toll-free telephone number, thus keeping the Lab's telephone charges to a minimum.

An 800 Telephone Directory is also available in the Computing & Communications Division, Bldg. 515. To use this directory, contact Nick Pisco, Ext. 2000.

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Dennis Reuter, a refrigeration & air-conditioning engineer in the Plant Engineering Division, simplified the procedure for performing oil analysis on chillers. His idea involved the installation of a valve on the chillers, eliminating the need to pressure them prior to analysis. Since the analysis can now be performed with the chiller on or off, this procedure can be done in one-eighth the time. For this time-saving suggestion, Reuter was awarded $720.

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John Passaro, an electrician at the Alternating Gradient Synchrotron Department, suggested reusing the metal trays used to route cable within experimental areas. Because of their use in the experimental area, proper disposal procedure requires the cable trays to be classed as hazardous. But the level of radioactivity is extremely low and far from dangerous, allowing reuse before final disposal. For this suggestion, which is estimated to save $1,000 annually, Passaro received $100.

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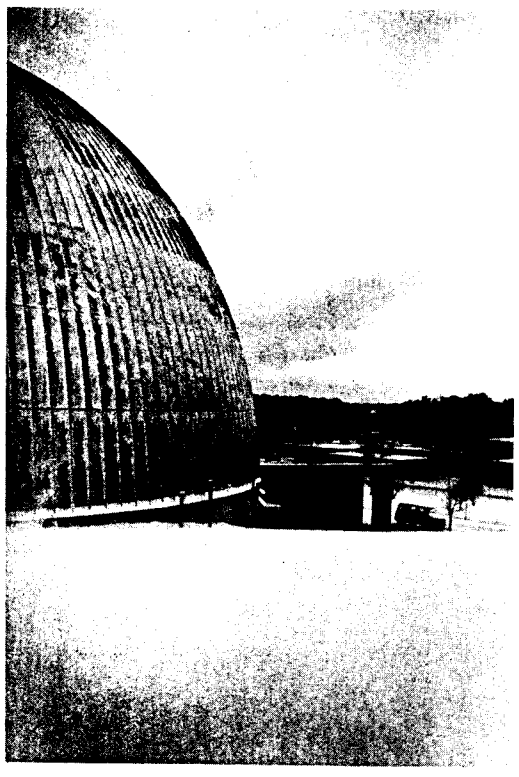
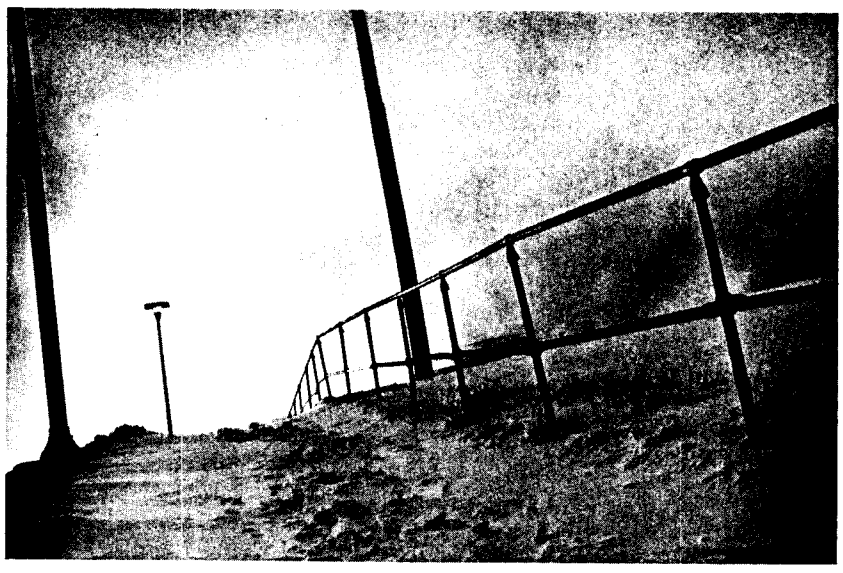
Donald Shea, a tool & instrument maker with the National Synchrotron Light Source Department, pointed out a safety hazard on the Baldor Abrasive Cut-Off Machine. Because of a design flaw, the machine could be inadvertently turned on when the abrasive disk was being changed. As a result of Shea's suggestion, these machines are now disconnected from their power source before servicing. For his safety suggestion, he has been awarded $150.





Snow, Snow and More Snow

Photographer Roger Stoutenburgh took these photos earlier this month, but scenes like these seem to be dominating the BNL landscape this winter.

BNL Device (cont'd)

energy is wasted as fluorescence, with a yield that is inversely proportional to the photosynthetic efficiency.

By measuring the fluorescence of phytoplankton, different photosynthetic parameters may be determined, Kolber explained. These include the effectiveness of light collection, also called the photon-absorption cross-section, a measurement of how big and how efficient the plant's "antenna" of light-absorbing molecules is. Also measured is the photosynthetic yield, which is a measure of photosynthetic work per photon, and the ultimate rate at which photons are converted to photochemical work.

"Because these parameters are highly sensitive to such factors as nutrient availability, those measurements can produce an indication of nutrient conditions in the ocean," he said. "If we are capable of measuring the parameters over time, eventually we will be capable of saying that something is changing."

The iron-addition experiment was but one example of the fluorometer's scope, Kolber said. He forecasts that measuring fluorescence will become a standard methodology among oceanographers once the device is mass-produced by Environmental Monitoring Systems starting around April of this year.

Indeed, orders for the instrument are pouring in, and Kolber will address a special section on fluorometry at the annual meeting of the American Geophysical Union in June. A DOE Ocean Margins program will use an FRR fluorometer in a March cruise, and another instrument has just left for a research cruise off Antarctica. Not bad for an instrument that was just an idea two years ago, and only took its first swim a year ago in Hawaii. — Kara Villamil

The Day Was Nice For a Stroll on the Ice

While many Long Islanders were trying to stay warm in their houses last Saturday, a group of 18 intrepid members of the BNL Mountain & Canoe Club braved the cold and windy conditions to walk across the frozen Great South Bay. It was the first time since 1988 that the bay has been icy enough to make the trek. Starting from the Bellport village dock, the adventurous troupe of BNLers dodged speeding scooters and other ice boats, and watery rifts in the ice, as they made their way to Fire Island. While they had rescue equipment at the ready, the only injury was to one member's pride, as he fell from a slippery Fire Island dock onto, and then through, the ice. Besides the ice walk, the Mountain & Canoe Club has other activities planned for 1994, including a spring canoe trip and a summer camping trip on Watch Hill. Those interested in joining may call club president Rich Casella, Ext. 7975, or Alan Kuehner, Ext. 4226, who took this photo.

Coming Up

The Afro-American Culture Club will present its 13th Gospel Extravaganza on Saturday, February 5, at 7 p.m., in Berkner Hall.

Joining the featured group — The Bronx Mass Choir — will be five others: The Keys of Heaven from the First Baptist Church of Cutchogue; the First Pentecostal Church District Choir of Linden, New Jersey; the Living Waters Church Music Ministry of Aquebogue; the Maranatha Choir Friendship Baptist Church of Riverhead; and BNL's own nondenominational and multicultural Gospel Choir.

Tickets, at $12 for adults and $5 for children 12 and under, will neither be reserved nor sold at the door. Purchase them in advance from April Donegain, Ext. 2459; Bruce Penn, Ext. 7213; Vanessa Crump, Ext. 2903; Frances Ligon, Ext. 3709; or Pauline Dixon, Ext. 2164.

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In early celebration of Valentine's Day, the Baltimore Consort will give a special performance called "Cupid's Cabinet," as part of the BERA Concert Series, on Wednesday, February 9, at 8 p.m., in Berkner Hall. The ensemble specializes in British, French and Italian music of the 16th and 17th centuries, creating improvisatory arrangements in the style of that period.

Purchase tickets at the door for $14 general admission, $9 for students and people over 65, and $5 for youths under 18.

Volunteers Needed

Men and women 20 years and older, and pairs of identical twins 18 years and older are needed for participation in brain-imaging studies. A fee will be paid. Supervisory approval is required. Contact Naomi Pappas, Ext. 2694.

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ANITA COHEN, Editor
MARSHA BELFORD, Assistant Editor

Bldg. 134, P.O. Box 5000
Upton NY 11973-5000
Tel. (516) 282-2345; Fax (516) 282-3368

Big Romantic Bash Tickets Almost Sold Out

Dance and dine your Valentine,
The music's soft, the food so fine.
Enjoy an evening so divine,
Lips will quiver, "Please be mine!"

By the time the Bulletin went to press, there were only a handful of tickets remaining to the *Heart to Heart* Dinner-Dance on Friday, February 11. If, by the time you read this, you cannot get your tickets, be reassured that the BNL Dance Club is establishing a waiting list.

In addition, if you did buy tickets, but now cannot make it to the dinner-dance, the BNL Dance Club will gladly buy them back, so they can be sold to people on the waiting list.

To get on the waiting list or have your tickets repurchased, call Brenda Riddle, Ext. 4524.

Hospitality News

Doris Rueger will present a program on quilting at the next Hospitality Committee get-together on Tuesday, February 1, at 9:30 a.m., in the Recreation Building in the apartment area.

To participate in the program, bring a pair of scissors, thread and a sewing needle; the other necessary materials will be provided.

Spouses of Lab employees and guests are welcome. Bring the children, along with a toy or two. Refreshments will be provided.

Basketball

Games of January 20

Magic 71		Runaways 62	
T. Buck	17	P. Ratzke	22
D. Hoggard	15	E. Meier	10
M. Williams	13	J. Desmond	9
N. Donahue	10	G. Shepherd	6
T. Mayo	8	B. Wells	6
R. Jackson	5	J. Gaeta	5
J. Garrison	3	C. Edwards	4
Scram 54		**Deep Six 36**	
J. Duggan	12	T. Fountaine	8
A. Boerner	11	B. Hobson	6
A. Jones	8	D. Eleazer	6
T. Powers	7	D. Harris	5
S. Nappi	6	E. Gregory	4
K. Johnson	6	G. Mack	3
P. Bergh	2	T. McGill	2
J. Barkwill	2	U. Tapley	2

Bowling

Red/Green League

F. Griswold bowled a 245/204/620 scratch series, R. Raynis 243, R. Wiseman 235/215/636 scratch, E. Larsen 235, R. Mulderig Jr. 233/205/633 scratch, K. Asselta 226, R. Mulderig 225/213/630 scratch, K. Koebel 223/200/610 scratch, S. DiMaiuta 217, M. Guacci 214/206/609 scratch, A. Warkentien 214, E. Sperry IV 210, R. Larsen 207, A. Pinelli 205, H. Arnesen 203, R. Prwivo 202.

White League

Kevin Carney bowled a 226, Tom Romano 203, Nancy Erickson 202/181, Pete Wynkoop 202, Jeanne Penoyar 201, Marilyn Picinich 189, Lorraine Rocklein 183. John McCarthy converted the 2/4/10 split, Terry Meier converted the 1/5/10 split, Good Times won first half.

In Stormy Weather: Dial 282-INFO*

for information about BNL and the Child Development Center.

*Dial the letter O, *not* zero!

U.S. Open Bus Trip

The BERA Tennis Committee has scheduled a repeat of its popular bus trip to the U.S. Open Tennis Championships at the National Tennis Center, on Tuesday, September 6. The committee invites all to join them.

The bus will leave from the Lab tennis-court parking lot at 8:30 a.m. and make one or two stops at park & rides on the Long Island Expressway. Departure from the National Tennis Center will be at 7 p.m.

The cost of this trip is $47 per person, including a $33 ticket for the day session and the round-trip bus fare. Paid reservations are being accepted at the BERA Sales Office during weekday hours. Sign up early, as there are only 49 seats available on the bus.

Arrivals & Departures

Arrivals

Deepak Raparia ..... AGS
Charles S. Springer Jr. ..... Chemistry
Joel L. Sussman ..... Chemistry
Charles G. Trahern ..... RHIC
Robert J. Van Wormer ..... RHIC

Departures

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

Kyra M. Carbone ..... Biology

BERA Returns to Disney World

It's time to sign up for the fourth annual group trip to Walt Disney World in Florida. Sponsored by the Brookhaven Employees Recreation Association (BERA), the seven-day, six-night trip is scheduled from Wednesday, September 28, through Tuesday, October 4, and is open to BNL employees, guests, on-site contractors, and their families.

This year participants will enjoy deluxe accommodations at one of Disney's newest resorts, the Dixie Landings, which is situated on a bayou and offers Southern specialties in its fine dining rooms and casual food court.

The discounted group-package rates per person are as follows:

4 adults/rm.	$798	child age 10-17*	$592
3 adults/rm.	$840	child age 3-9*	$536
2 adults/rm.	$925	child age 2	$316
1 adult/rm.	$1,257	child under 2	no cost

**Rates for ages 3-17 are applicable only when children occupy room with adult(s); maximum five per room, six with child under 3.*

Included in the rates are:

- Round-trip, non-stop USAir flight between Islip and Orlando;
- Round-trip transportation between Orlando airport and the hotel;
- Greeting and assistance by Disney representative;
- Six nights at Disney's Dixie Landings Resort;
- Seven days unlimited transportation within the Walt Disney World Resort;
- Unlimited admission and use of attractions at the Magic Kingdom, Epcot Center, Disney-MGM Studios Theme Park, Typhoon Lagoon, Pleasure Island, River Country and Discovery Island;
- One breakfast or lunch at any resort restaurant, including the exclusive Grand Floridian;
- 1/2-day escorted group tour of "Behind the Scenes" at MGM Studios;
- One copy per room of Steve Birnbaum's *Guide to Walt Disney World*.

Stop in to see BERA's "Disney Family Collage" from previous years and to reserve your space, first-come, first-served, with Recreation Supervisor M. Kay Dellimore, Ext. 2873, Personnel Division, Bldg. 185. A deposit of $100 per person is required to reserve airline seats.

For more information, call Dellimore, Ext. 2873, or Andrea Dehler, Ext. 3347.

Volleyball

Standings as of January 19

Open League		League 1	
GTEAM	29-10	Rude Dogs	31-8
Me and the Boys	25-14	Upfagrabs	27-12
The Roofing Co.	26-16	Network News	18-21
Far Side	14-25	Underdogs	15-27
Penetrating Vollies	5-34	Fornossing	8-31
League 2		**League 3**	
Safe Sets	29-4	Silver Bullets	24-9
Nuts & Bolts	23-10	Jolly Vollies	23-10
Net Wits	21-12	Take Five	19-14
Fossils	20-13	Slow Hands	17-16
Mon. Night Live	19-14	High Volley'em	10-23
Night Court	10-23	Upton Ups	6-27
Spiked Punch	8-25		
NTTP	2-31		

Cafeteria Menu

Monday, January 31

Soup: Split pea	.80/1.10
A la Carte: Broccoli PizzAmore	2.75
Fitness: Pasta w/vegs.	3.25
Deli: Pastrami sandwich	2.95
Grill: Reuben platter	2.95
Salad: Tomato & mozzarella cheese	

Tuesday, February 1

Soup: Beef & mushroom barley	.80/1.10
A la Carte: Italian sausage hero	3.25
Fitness: White bean & eggplant casserole	3.20
Deli: Hot roast beef sandwich au jus	2.95
Grill: Chicken Teriyaki w/rice	3.35
Salad: Chef's tuna bowl	

Wednesday, February 2

Soup: Cream of broccoli	.80/1.10
A la Carte: Yankee pot roast w/veg.	3.35
Fitness: Baked lemon chicken	3.45
Deli: Virginia ham sandwich	2.95
Grill: Monte Cristo platter	2.95
Salad: Fresh fruit	

Thursday, February 3

Soup: New Orleans chicken gumbo	.80/1.10
A la Carte: Veal Parmesan w/veg.	3.35
Fitness: Chicken tacos	2.25
Deli: Corned beef sandwich	2.95
Grill: Philly cheese steak platter	2.95
Salad: Turkey Waldorf platter	

Friday, February 4

Soup: Manhattan clam chowder	.80/1.10
A la Carte: Catch of the day w/veg.	3.50
Fitness: Display cooking of special entree	
Deli: Roast turkey sandwich w/gravy	2.95
Grill: Tuna melt platter	2.95
Salad: Chef's salad	

The Center Club...Super Bowl Party... Sunday, January 30... all-you-can-eat buffet, beverages, prizes, giveaways & fun.

Classified Advertisements

Placement Notices

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

Each week, the Personnel Division lists new placement notices. The purpose of these listings is, first, to give employees an opportunity to request consideration for themselves through Personnel, and second, for general recruiting under open recruitment. Because of the priority policy stated above, each listing does not necessarily represent an opportunity for all people.

Except when operational needs require otherwise, positions will be open for one week after publication.

For more information, contact the Employment Manager, Ext. 2882, or call the JOBLINE, Ext. 7744 (282-7744), for a complete listing of all openings.

LABORATORY RECRUITMENT - Opportunities for Laboratory employees.

MK 0894. COMPUTER ANALYST POSITION - (part-time, term appointment) Requires a Ph.D. in mathematics or computer science, extensive experience in real data acquisition and experiment control, and experience with both hardware and software. Knowledge of numerical linear algebra, physics, chemistry, networking and databases desired. Will provide technical support to theoretical and experimental research efforts in the Department. Chemistry Department.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside candidates.

NS 0786. MANAGER, PLANNING AND AUDITING GROUP - Requires bachelor's degree in a relevant field, master's degree a plus, and a broad background in safeguards and security functions, which should include audit and quality assurance programs; nuclear security operations; information, operations and computer security programs; security alarm, assessment, and access control systems. Will manage the Laboratory's personnel security clearance program, classified document accountability and control systems, technical and engineering support programs, including technical and computer security. Will administer the Division's internal audit, inspection and QA programs. Must be able to obtain and maintain a security clearance. Safeguards & Security Division.

Motor Vehicles & Supplies

TIRES - 2, Dunlop steel-belted radial, Winter Max, 175/70SR13 mounted on Nissan 4½Jx13 rims, $50. Wayne, Ext. 4010.

CAP - Leer alum. truck cap for compact 6' bed, $25. George, Ext. 4769.

91 GEO METRO - 5-spd., 2-dr., 3-cyl., 50+ mpg, 36k mi., $3,995. Joe, Ext. 2898.

88 JEEP CHEROKEE CHIEF 4x4 - 2-dr., 6-cyl., 73k mi., moon roof, at, p/l, p/w, $7,500. 473-2473.

87 HYUNDAI EXCEL - 2-dr. h/b, red, 5-spd., ac, 75k mi., runs well, $1,300. Jonathan, 395-5221.

85 NISSAN - 2-dr., ac, a/t, fully loaded, new muffler, brakes, timing belt, excel. cond., asking $2,300. 361-9120 or 917-855-4404.

83 HONDA ASPENCADE - 1100cc, Gold Wing, mint, loaded, factory, am/fm cass., CB, chrome, extras, better than new, $4,000. Ext. 3499.

82 TRANS AM - T-tops, a/t, every option, alarm, 305 Crossfire injection, looks good, runs well, $2,500. 698-0596.

82 CHRYSLER NEW YORKER - 4-dr., a/t, p/s, p/b, p/w, ac, runs well, $750. 587-3782 after 6 p.m.

81 DATSUN 200SX - many new parts, p/w, p/l, good cond., $500 neg. Mitch, Ext. 4212 or 928-7732.

80 VOLVO 240 DL - good cond., asking $1,400. Ramesh, Ext. 3267.

79 DATSUN 310 - h/b, m/t, inspected, 145k mi., many new parts, good tires, some rust, great station car, orig. owner, maint. records, $250. Marsha, Ext. 5053.

70 CHRYSLER NEWPORT - 360, p/s, p/b, ac, excel. cond., runs well, orig. owner, $500; Honda spare on rim, new, $25. 821-3762.

68 PICKUP CHASSIS - w/o bed, V-8, 3-spd., many good parts, $125; tires, 23575R/15, all season steel-belted, like new, $45 ea. Steve, Ext. 4211.

66 OLDS CUTLESS - 4-dr., driven daily, good tires, dependable, $300. Ray, Ext. 2012 or 325-0928.

CAP - for full-size 8' pickup truck, $139. Frank D., Ext. 2022 or 399-4480.

ENGINES - '71 Olds 455c.i., two '75 Pontiac 400 c.i. Eddie, Ext. 399-5701.

Boats & Marine Supplies

TRAILER - jet ski or small boat, galvanized, new tires, lights & bearings, excel., $200. George, Ext. 4769.

Furnishings & Appliances

AIR CONDITIONER - Amana, 8,000 Btu, window unit, used 1 summer, $250. Carole, Ext. 7100.

AIR CONDITIONER - window, Amana, 6,650 Btu; early American couch; CSA ski machine; dressers; coffee table, much more. 265-5712.

BEDS - 1 queen, 1 twin; tables, glass top, 2 side, 1 center; dresser, oak & mirror. Shruti, 821-1963.

BEDROOM SET - teen, Atlantic mica, 10-piece, bunk, desk, closet, tan, wood-tone, 4 yrs. old, $1,500. Sue, Ext. 3492 or 734-2593.

CHINA CABINET - contemporary, light oak finish, $250; dining room, oblong oak table, leaf, 5 captains' chairs, $250. 232-1874, leave message.

COMPUTER DESK - small, w/chair, desk lamp, asking $20. Krzysztof, Ext. 3406.

CURIO CABINETS - walnut top, 4 glass shelves, bottom compartment w/light, $80. Bob, Ext. 7238.

FUTON - frame, queen-size, pine, good cond., $75. Doug, Ext. 2945.

RANGE/OVEN - GE, 30", electric, freestanding, almond, 5 yrs. old, excel. cond., $195. Lisa, Ext. 5867 or 467-8185.

REFRIGERATOR - Whirlpool, side-by-side, white, good cond., 8 yrs. old, energy-saver, asking $100. Fran, Ext. 4835.

ROCKING CHAIR - dark pine, $70. 744-2060.

SOFA - 3-piece sleeper sectional, full-size innerspring mattress, end recliner, brand-new, Mike, Ext. 5320.

SOFA - & matching chair, recliner, end table, you pick up. Bob, Ext. 4656.

STOVE HOOD - 30", white, ductless fan, 2-spd., w/light, never used, $20; hanging white globe light, $20; or best offer on both. Donna, Ext. 4127.

TABLE - & dining room, solid cherry wood, Keller, 3-leafs, 6 chairs, pads, asking $975. 325-8434.

Tools, House & Garden

PLAY CENTER - Eagle's Nest, w/6 stations, Cool Wave slide, $250 del.; swing set, w/glider, $150 del. Don, Ext. 7237 or 744-2921 after 5:30 p.m.

STOVE - Surdiac, coal, Southport model, excel. cond., make offer. Ext. 3334 or 744-2404.

WOOD STOVE - single-log, stand up, black, best offer. T. Nolan, Ext. 5265.

COAL STOVE - Surdiac, clean, very efficient, black textured, glass front, $425. 744-2060.

WOOD & COAL STOVE - black cast iron, Vermont Castings Vigilant, excel. cond., coal hopper, glass doors, $400. 286-0904.

SAW - radial arm, Craftsman, 10", w/stand, dust hood, planer attach., blades, $300; vise, bench-top, Black & Decker Workmate. Ralph, Ext. 2591.

SNAKE - Water dragon, heat rock, 20-gallon tank, $75. 331-2270 eves.

Sports, Hobbies & Pets

BOW - PSE SR500, target bow, R.H. 27"-29" draw, 60-70 lb., new, never used, orig. $510, sell for $325. Bill, Ext. 2377 or 821-6523.

COCKATIELS - babies, hand-fed, lovely. Missy, 395-5748.

EXERCISE BIKE - Ajay, $40; barbell, dumbbells, 80 lbs. of weights, $30; Sport Flex cross training system, $150. Bill, 878-4356.

EXERCISE EQUIPMENT - Body by Jake, good cond., $100; FM 340 ski machine, $120; exercise bike, $75. Betsy, Ext. 2758.

LACROSSE STICK - STX Dominator, 1 yr. old, hardly used, in excel. cond., asking $60. Alex, 929-5945.

PLAYER PIANO - circa 1920, Wurlitzer player, w/rolls, walnut finish, needs work, collector's item, $500 neg. 821-3762.

SKIS - Rossignol 180, w/Tyrolia bindings, tuned, excel., $100. 744-2060.

STAMP CATALOGS - Scott 1991, 4 volumes, used, $25. Ext. 3896.

The Brookhaven Bulletin is printed on paper containing at least 50 percent recycled materials, with 10 percent post-consumer waste.

Send a Love Note To Your Valentine

Is there a special message you'd like to send to your valentine? Are you looking for a valentine? You can have your Valentine's Day message printed in the Brookhaven Bulletin on February 11.

Send your 15-to-20-word "love note" to the Bulletin, Bldg. 134, by Friday, February 4. Use a Sales & Notices Bulletin classified ad form, but mark it "Valentine's Day." You must sign your name and include your life number and extension, but your name will not be printed unless it is clearly part of the message.

WEIGHT BENCH - 200 lbs., Z-bar, barbell, dumbbells, $125. 331-2270 eves.

Audio, Video & Computer

AUDIO SYSTEM - Fisher, 2 speakers, asking $200. Ramesh, Ext. 3267.

CAMCORDER - Hitachi S-VHS, many features, like new, orig., $1,200, sell for $675. L. Arnold, Ext. 5462.

COMPUTER - IBM PC, 640K RAM, 60MB HD, 360k floppy, 8087, Hercules video, amber monitor, software, asking $200. Alan, Ext. 2928 or 929-0461.

COMPUTER - Tandy 640k RAM, 2-360K floppies, Amdek monochrome mon., Tandy 9-pin printer, computer table, $175/all. Charlie, Ext. 5046.

COPIER - Canon NP125, enlarges & reduces, w/cabinet, $200. Bill, 878-4356.

VIDEO GAMES - Sega system, 15 action games, 2 controllers, w/gun, $125. 331-2270 eves.

VIDEO GAMES - Super Nintendo, $30/ea. Ext. 7505.

VIDEO GAMES - Genesis Golden Axe, $20; Patrick Riley's basketball, $20; Gameboy Tetris, $10; 472-3254.

VIDEO GAMES - Super Nintendo Teenage Mutant Ninja Turtles IV, Turtles in Time, $30. 472-3254.

TV - Sylvania, 19", color, $60. Mark, Ext. 5350.

Miscellaneous

BOWLING BALL - men's, $20; b&w TV, $20; cane desk chair, $20; 36" lamp, $20; women's white jacket, $10. Kathy, 744-2203.

CAR SEATS - 2, $20/ea.; strollers, 2, $20/ea.; toys. Shruti, 821-1963.

CHRISTMAS TREE STAND - rotates & plays music, $5. Lloyd, Ext. 5225.

COAT - suede, gray, women's, lambskin, full length, wool lining, made in Scotland, size 10, asking $100. Cheryl, Ext. 2272.

BOOK - *History of the 305th Infantry* by Frank Tiebout, 1919, illustrated, chapter on Camp Upton, excel. cond., $60. Brian, 234-9487.

JACKET - women's, Pendleton, wool, lt. brown, hardly used, size 14, orig. $125, make offer; jean jacket, Sassoon, med. Janet, Ext. 2345 or 929-3910.

JACKET - Starter, Buffalo Bills, winter parka, black, size large, like new, $45. Bosshard, 924-5220.

RING - women's, 14k gold, 2 carat total diamond weight, cocktail ring, w/$3,195 appraisal, size 10, sell for $700. Ruth, Ext. 3305.

TELEPHONE ANSWERING MACHINE - Record-a-Call, model 675, dual remote, records calls, screens, 2-way record, dictate notes, $20. Lloyd, Ext. 5225.

DRAFTING TABLES - Stacor, metal posts, w/straight edge, 3½'x6' top, $300; 3¼'x5' top, like new, $250. Ron, Ext. 2175.

RING - diamond engagement, pear shape, ¾ carat; 5 diamond eternity ring, .30 carat, $1,500/both. Cathy, Ext. 3541.

SLIDE CAROUSEL - $10; coffee table, $30; upright vacuum, $50; white paint, 2 gallons, $18; ice skates, size 9, $20. Kathy, 744-2203.

Free

DOG - Husky Spitz, white, looking for loving family, loves other animals and children, sad owner moving to apt. Mary, 924-6235.

WATER CONDITIONER - Culligan Mark 59, Bruner water filter, 35-gal. water tank, homeowners only, no pros. Scott, Ext. 5319 or 929-4563.

Car Pools

BOHEMIA-E.ISLIP-OAKDALE - looking for 1 or 2 drivers for existing car pool. Frank, Ext. 2314.

SETAUKET - Main St., would like to join or form immediately. Amir, Ext. 3707.

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

BELLPORT - cottage in village s. of S. Country Rd., private 3 rms. + kit. & bath, heat & water incl., $800/mo. 286-0613.

CALVERTON - 2 bdrm. on lake, parquet floors, cathedral ceiling, hot air heat, $650/mo. + util. Mike, Ext. 3430.

CORAM - 1-bdrm. co-op, new appl., d/w, cac, upper unit, pool, tennis, clubhouse, heat/gas incl., $700/mo., avail. Feb. 1. 331-6720.

HOLBROOK - 1-bdrm. apt., full kit., bath, combined l/r-dining area, second floor, priv. ent., 20 min. to Lab, single, nonsmoker, no pets, $500/mo. incl. util. Fred, Ext. 7947 or 588-2268.

MIDDLE ISLAND - furn. 2-bdrm. condo, 1½ baths, cac, all appl., 5 min. to Lab, clubhouse, $875/mo. 751-8351.

MILLER PLACE - 1 bdrm., l/r, eik, full bath, cable, priv. ent., spare l/r or den, near all, single $620/mo., couple $675/mo., 1 mo. sec., util incl. Mitch, Ext. 4212.

PATCHOGUE VILLAGE - newly renovated apt., 2-floor Victorian home, 5 rooms, priv. ent., $900/mo. util. incl. 475-8240.

RIDGE - studio apt., furn., 3 miles from Lab, $450/mo. Ext. 2673, 744-8632.

ROCKY POINT - 3-rm. apt., oil heat, wood stove, near beach, no pets, $525/mo. + util. 744-5282.

SHIRLEY - 1-bdrm. waterfront property, eik, l/r, full bath, fp, priv. ent., parking, furn., 1 mo. sec., $650/mo. Matthew, 399-2989.

SHOREHAM - ground floor 2-bdrm. apt., l/r, kit., bath, spare rm., laundry, priv. ent., own thermostat, cable, priv, beach, tennis, no pets, 15 min. to SUNY, $575/mo. incl. util. 744-3308.

SHOREHAM - new, partially furn. 1-rm apt., full bath, kit., priv. ent., immediate occupancy, 821-4318.

SOUND BEACH - 1 bdrm., full bath, kit.-l/r combo, priv. ent., $600/mo. + util. & sec.; 2-bdrm. apt., bath, l/r, kit., near shopping, beach, $650/mo. +. 744-3284.

S. JAMESPORT - Victorian, bay, 1 bdrm., l/r, eik, shared guest rooms, no pets, nonsmoker, single pref., $500/mo. + util. 1 yr. lease. Mike, Ext. 4181.

W. SAYVILLE - Fairfield properties, 1-bdrm. apt., upstairs, w/w, $735/mo. incl. heat. Sharon, Ext. 7790.

CATSKILLS - 3-bdrm. chalet w/sleeping loft, fully furn., near Hunter & Windham Mts., great for skiing Kay, Ext. 4501, or Bea, Ext. 3642.

HILTON HEAD, SC - 2-bdrm. condo, sleeps 6, fully furn., 2 baths, tennis, beach, golf nearby, Oct.-Dec., $350/wk. Ext. 3147 or 689-5378.

KEY WEST, FL - 4/16-4/23 condo, sleeps 2, on water, kit., pool, priv. beach, gym, marina, boat rentals, hot tub, w/d, tiki bar, walk to town. Sheryl, Ext. 7716.

LAKE PLACID, NY - 3-bdrm. condo, 2 baths, walk to village, skating oval, arena and restaurants, shuttle service to Whiteface, views of Lake Placid and Whiteface. Tom, Ext. 4631 or 744-0681.

For Sale

CALVERTON - 2-bdrm. condo, 5 appl., ac, patio, upper deck. Ext. 3558.

CENTER MORICHES - 3-bdrm. ranch, minutes from village, full bsmt., gar., new bath, new kit., ⅓ acre, $115,000 neg. 878-4825 after 6 p.m.

HOLBROOK - Woodgate Village, 2-bdrm. townhouse, wood stove, new appl., windows, siding, bi-fold doors, near major roads/shopping, ask. $103,000. Joann, 472-6742.

MEDFORD - 3-bdrm. center hall Colonial, 1½ bath, eik, den, l/r, d/r, gar., 0.4 acre, fenced, $117,000. 286-1571.

MIDDLE ISLAND - 3-bdrm. ranch, l/r, d/r, eik, hard wood floors, gar., full bsmt., lg. yard, pool, dead-end street, wood-burning stove, 10 min. to Lab, owner trans., $109,999. Mary, 924-6235.

MIDDLE ISLAND - Fairview at Artist Lake, 2-bdrm. condo, 1.5 baths, cac, gas heat, all appl., pool, tennis, clubhouse, 5 min. to Lab, $79,900. 751-8351.

PORT JEFFERSON STATION - 3-4-bdrm. high ranch, 2 full baths, w/w, cac, fp/coal stove, sprinkler, fenced, front/rear decks, appl., skylight, legal income apt, ⅓ acre, treed, Bob, Ext. 2309.

RIDGE - 3-bdrm. townhouse, 1½ baths, lg. l/r, 5 min. to Lab, $69,900. 924-4734.

RIDGE - 3-bdrm. ranch, l/r, den, eik, gar., vinyl siding, lg. fenced yard w/igs, cul-de-sac, $122,000. 924-2298 eves/wknds.

WADING RIVER - 3-bdrm. Colonial, 2½ baths, 2-car gar., custom kit., Jennair, gazebo, shed, igs, igp, deck, steam bath, satellite dish, SWRSD, 1.1 acre, $239,000. 929-8323.

WADING RIVER - custom 4-5 bdrm. Victorian farm ranch, 6 yrs. old, 2.5 baths, open floor plan, 3-car gar., ½ acre, backing 8-acre sanctuary, SWRSD, $259,000. Rich, 929-8514.

PORT CHARLOTTE, FL - ¼ acre bldg. lot, $10,900. 929-8323.

WEST PALM BEACH, FL - estate sale, Century Village, 1-bdrm. condo, bath, patio, in/outdoor pools, golf, tennis, sailing, entertainment in clubhouse, no dogs, 55 yrs. & over, $17,500. Regina, 286-8849.

ST. MAARTEN - timeshare, beachfront efficiency for 4 in Pelican Flamingo Resort, week 14, 96 yr. lease. Paul, 878-1486.

Wanted

ARMOIRE - condition doesn't matter, cheap; car stereo w/cassette that works. 821-2854, leave message.

COFFEE TABLE - and/or end table, whitewashed wicker queen headboard, wire shelf. Donna, Ext. 4127.

HOCKEY SKATES - boy's size 5 or 6. John, Ext. 5750 or 821-6151.

JUNK - cars, trucks, machinery, alum. boats, will remove. Rich, Ext. 4986 or 589-9103.

NEXT COMPUTER USERS - to form or join NEXT computer users group. Amir, Ext. 3707.

NORDIC TRACK - ski machine. Sharon, 929-4798.

ROOM TO RENT - Ext. 2058.

SKIERS - to ski Hunter, 2/9, Windham, 2/23, $43 for bus and lift, send payment to Augie Hoffman, Bldg. 510C.

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