BROOKHAVEN BULLETIN
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BROOKHAVEN NATIONAL LABORATORY

They Said It Couldn't Be Done

For the past two months the AGS crew has been methodically tuning through depolarizing resonances to accelerate polarized protons in the Alternating Gradient Synchrotron. For many years, some have predicted that it would be impossible to accelerate polarized protons in a high energy strong focusing accelerator like the AGS. However, it has now been done. On April 19, the AGS accelerated polarized protons, with an injected polarization of about 65%, to 6 GeV while maintaining a polarization of 60 to 65%, and then on to 10 GeV/c with a polarization of almost 40%.

Up to 6 GeV, all six strong depolarizing resonances were either corrected with the 48 correction dipole magnets or jumped with the four fast pulsed quadrupole magnets. So far, no time has been taken to correct the weaker depolarizing resonances between 6 and 10 GeV. The polarized proton group is continuing to wend its way through the minefield of depolarizing resonances on its way to trying to achieve the world's highest energy polarized beam. They have three more GeV to go...stay tuned!

BNL Reaches Out

Two nights a week, the basement of the First Baptist Church of Riverhead turns into an old-fashioned one-room schoolhouse. The students range in age from six to 16, and they come from all over — towns like Riverhead, Bellport, Brookhaven and Mastic Beach. What draws them here at night for more schooling? Science classes on Tuesday, and computers on Wednesday.

The night school is a community outreach program sponsored by Brookhaven Lab, through the Affirmative Action Office. All the teachers are volunteers from the Lab. The program just began in February, and the intent is to run two semesters every school year.

A recent visit to the church one Wednesday evening found a busy classroom of students. Because of age differences, the youngsters were separated into three groups, each group clustered around a Commodore 64 computer. The more advanced students were being introduced to computer graphics. The beginners were learning how to write a program for a simple quiz: who is the pastor of this church? One six-year-old had been assigned to spell out words on the screen.

Two teachers circulated among the groups. That night Melody Brown, Safety and Environmental Protection Division, and Alex Richardson, Management Information Systems Division, were on duty. On other nights, classes are taught by Earl Blanton and Frances Ligon, Affirmative Action Office.

While waiting their turn on the machines, several children voiced their reasons for taking the class. Some of them don't have access to computers at school, and welcomed the chance to learn. Eight-year-old Trina Miles, who has a home computer, said she comes both nights because she "likes science and computers" and wants to "learn more and be smarter in school." Kathryn Gendron, age 11, pointed out that even though her school had computers, they were mostly used as a stand-in teacher to give tests. "Here, it's totally different. We are learning how to program a computer," she said.

The computer class is hampered by too few machines for the nearly 35 students that show up every Wednesday night. But more computers are on order, and eventually there will be one computer for every two to four youngsters.

The Tuesday science classes are less crowded, with 23 students on average. Topics include functions of cells and microorganisms, states of matter, scientific measurements, waves and sound, mechanical forces, and electrical circuits, all taught by means of simple experiments with a hands-on approach. One of the science teachers is Raynando Banks, a BNL semester student in pre-med at the University of Arkansas at Pine Buff. Said Banks, "In the schools teachers can kill young people's dreams. A kid might want to be a doctor, but be told it might be easier to be a nurse. The kids at Riverhead come voluntarily because they want to learn. I want to help them live their dreams a little longer."

Besides Banks, others who teach the general science classes are Earl Blanton; Ralph Wilson, Safety and Environmental Protection Division; McHarrell Thomas, Department of Applied Science; Robert Brown, Medical Department; and BNL semester

(Continued on page 2)

Alex Reben

From left, BNL semester student Raynando Banks explains the importance of measurements in science to Alexi Brown, Tonya Price, Tina Greene and Yolande Toney.

Alex Reben

BNL's Alex Richardson coaches Shanneikqua Hopson on using a computer.

Lehn Retires at Central Shops Spellman to Head Division

When Robert Lehn started at the Lab in 1947, Central Shops consisted of two large, empty gymnasiums. Now, Lehn will retire on April 30 as manager of seven well equipped shops which have achieved a solid reputation for turning out unique work of the highest quality. Succeeding him as manager on May 1 is Richard Spellman, Assistant Fabrication Supervisor.

Mort Rosen

Robert Lehn

Over the years, the people at Central Shops have had to do a lot of nontraditional machining in the building of accelerators and in making the diverse scientific apparatus required by the various departments. "By now," says Lehn, "we're used to making things that are, by ordinary shop standards, very unusual."

In the beginning, says Lehn, requirements for many of the scientific projects were such that it was difficult to get shops on the outside to do the work. "So we equipped ourselves not only with the necessary tools, but with a workforce that could handle these unique jobs," he says.

This workforce has been a remarkably stable group at the Lab. "Very few men have left because they have been dissatisfied," says Lehn. "They have taken a real interest in their jobs and they have been appreciated by the scientific staff for the work they have turned out."

Robert Palmer, Associate Director for High Energy Physics Research, confirms this and pays tribute to Lehn in particular: "It's clear the shops have provided excellent service and I don't know anybody who does not personally respect Lehn. I have known him for over 20 years, and we have had a long association on many special projects which would never have succeeded without his help."

Automation came to Central Shops during Lehn's tenure. It was a big change to go to numerically controlled machine tools and automatic welding machines. But now it is part of the routine.

At any given time, Central Shops can have an average of 300 jobs to complete. These range from something a welder can do in half an hour, to a complicated project which may take a year to fabricate. Lehn admits the volume can cause delays in production, "but it takes more than saying it fast to get the jobs done. So we have had to establish priorities and we follow that schedule."

Now the only schedule Lehn will have to worry about is in his woodworking shop at home. Although he will step down as manager on April 30, he will stay on until July 31 to advise Richard Spellman on his new job.

Spellman came to the Laboratory on December 1, 1975 as a tool and instrument maker, after working for several Long Island companies. He became a Shops Fabrication Assistant on January 1, 1978 and on July 1, 1983 was promoted to Assistant Fabrication Supervisor.

Mort Rosen

Richard Spellman

Also to take effect on May 1: Enrique Jimenez has been named Deputy Manager and will continue to supervise production; and, on the retirement of James McIntosh, Edward Jackle will become the Fabrication Planning Supervisor.

For Your Information

Recently the Supreme Court decided not to hear New York City's appeal regarding shipment of nuclear waste through the city. Thus, the last legal obstacle to shipments of spent fuel from the High Flux Beam Reactor has been removed. A date has not been set for the first shipment, but, in any case, the dates and times of this and subsequent shipments will not be made public because of new DOE security regulations. The spent fuel from the HFBR has been stored on site since 1976. In that year, New York City imposed a ban on making such shipments through the city. Prior to the ban, Brookhaven had made 330 shipments of spent fuel, without incident, over a 22-year period.

Andy Feldman with a framed picture of the Space Shuttle Columbia which was presented to him by the 170 members of the Radio Central Amateur Radio Club of Rocky Point, of which he is president. In the corner of the frame is the double-width QSL postcard Feldman received from Garriott. —photo by Reben

Holding the log of stations to which he talked, and wearing the standard in-flight headset, Garriott tests the ham radio and antenna he used during the ninth mission of the Columbia. The radio is placed in an upper crew compartment window of the aft flight deck immediately to Garriott's left. The antenna is enclosed in a box mounted to the window above him. — NASA Photo

Earth to Space — Come in Space

Last December 4th, Andy Feldman, Contracts & Procurement, conducted an out-of-this-world conversation with a man from space. Feldman, aka WB2FXN, was one of 40 earthbound people to exchange words via amateur radio with NASA scientist and astronaut Owen Garriott, the first ham to operate his radio from space, as he flew on the ninth mission of the Space Shuttle Columbia.

The night before making contact with mission-specialist Garriott, Feldman made last-minute adjustments to the four-foot square antenna he built for $7 in materials especially for the occasion. "At 9:30 p.m., I heard the bulletin over the frequency of the American Radio Relay League, the organization representing and serving radio amateurs, that told of Garriott's intention to operate his amateur radio as he passed over the East Coast the next morning during the 96th orbit of the space shuttle," says Feldman. "Using the orbital parameters of that working pass, I went out to my backyard in the 20 degree cold that Saturday night, and worked until 11:30 under spotlights, using a wrench, a compass, and a transit to focus the antenna for best possible communications.

"Sunday morning I was up by 7 a.m., and had my radio equipment warmed up by 8," continues Feldman. "According to my calculations, I could contact Garriott between 8:20 and 9:50 a.m., and I was thrilled that my theoretical predictions so closely matched the actual event.

"At 8:28, I acquired Garriott's signal as the space shuttle was clearing Key West, Florida. At 8:36:15, I received confirmation from Garriott that he had heard my call letters by his repeating them to me. We maintained contact for one minute. I was the 13th ham of 40 in the entire world to exchange call signs with W5LFL, Garriott, during that flight, and one of three hams on the East Coast who talked to him that morning. At 8:44, I lost his signal as Columbia flew over Newfoundland. Garriott covered a lot of territory traveling at 22,000 miles per hour."

While Feldman worked his radio and talked to the spaceman, his family witnessed the historic contact from Feldman's "ham shack," the third bedroom of his Port Jefferson Station home. "I taped my exchange with Garriott, and in the background you can hear my wife repeating 'I can't believe this is happening,' my nine year old son yelling, and our cocker spaniel barking," says Feldman. "They were as excited as I was."

Feldman began his preparation for his exchange with Garriott last July, as NASA and Garriott readied for Columbia's November 28 launch. NASA was permitting Garriott to operate his ham radio on board the shuttle as one of the flight's experiments: Garriott was to patch into NASA communications to demonstrate the utility of the ham system's operating as a backup to some of the shuttle's communication systems. Garriott was allowed to converse with radio amateurs on his own time when it did not interfere with mission activities.

Through a ham radio contact at the Johnson Space Center in Houston, Feldman obtained a copy of Columbia's crew activity plan, and a map of the space trajectories. From the flight data, Feldman noted the five passes the shuttle would make over the East Coast during which Garriott would be awake and off-duty, and the spacecraft would be upside down, with Garriott's loop antenna in a window of the shuttle facing the earth.

Operating from the aft flight deck of the Columbia, Garriott held in his hand a battery-powered 2-meter FM combination transmitter and receiver capable of five watts of output. To meet safety requirements for the manned space flight, this walkie-talkie cost $10,000. For one hour a day during the last seven days of the 10-day mission, Garriott transmitted continuously for one minute on the even minutes, and received continuously for a minute on the odd minutes as the orbitting space shuttle approached a portion of ground track where amateur radio operations were planned. Amateur radio operators were instructed to send their full call signs only, repeating them several times during the scanning period, to give more operators a chance to make contact with Garriott.

This March, Feldman received one of 40 double width commemorative "QSL" postcards numbered and signed by Garriott confirming his space-to-earth interchanges. Others who received Garriott's special QSL card included K7UGA, U.S. Senator Barry Goldwater, and JYI, King Hussein of Jordan.

"People have accused me of talking to extraterrestrials, and now I've proved them right," says Feldman. "I've been a licensed ham for 23 years, and that was the most exciting exchange I've had over the radio."

— Marsha Belford

Health Alert: Reye's Syndrome

Dr. Laura Sbarra, head of the Occupational Medicine Clinic, has received a communication from the Department of Pediatrics, SUNY, Stony Brook, regarding the possibility of an increase in Reye's Syndrome in children. She reports that this is based on very few cases and there is currently no reason for alarm. Parents should be aware, however, of symptoms in children which warrant prompt medical evaluation.

Reye's Syndrome is a rare complication of certain childhood respiratory infections or chicken pox. It begins with vomiting, which may be persistent and severe, and is often associated with signs of disordered brain function (disinterest in usual childhood activities, personality changes, confusion, drowsiness, slurred speech, staring, delirium). Persistent vomiting or abnormal behavior following such infections should be evaluated promptly.

Pamphlets about Reye's Syndrome are available at the clinic. Also, those having questions or suspecting the disease, may call the Reye's Syndrome Hotline at University Hospital, 689-8321.

Can He Type? Yes!

When 6'1" Donald Wilkinson walks into an office, jaws drop and people are flustered. It's because he is not what they expected.

Wilkinson is a secretary in the pool and it is not just a temporary stopover for him. He is hoping to find a permanent job — as a secretary.

He is the first male secretary to be

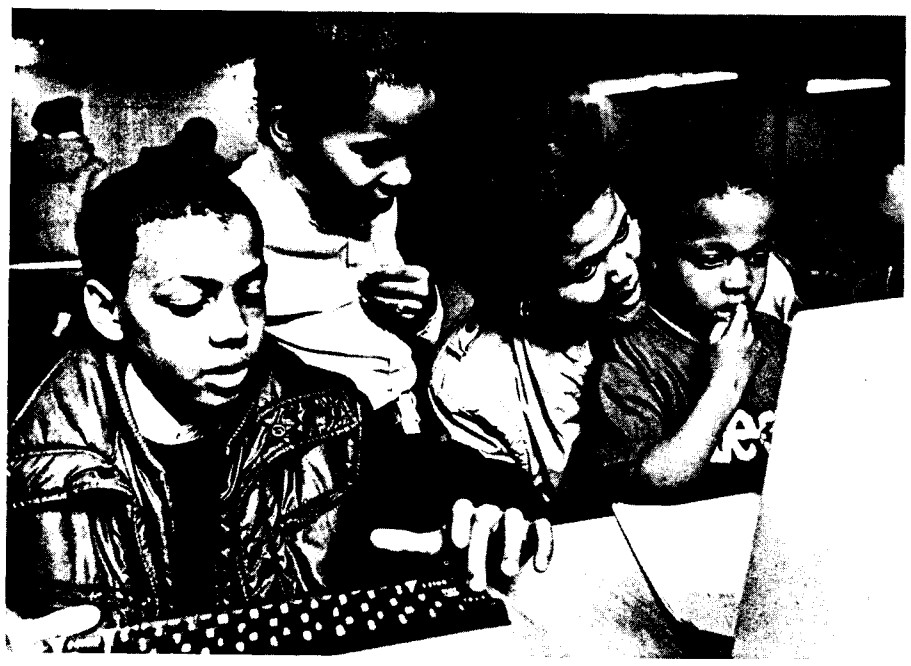
Alex Reben

Donald Wilkinson

employed at the Lab and he is often asked how he found his way into this non-traditional role for males. It happened in the Army!

Wilkinson spent seven and a half years with Uncle Sam's finest; four years in Texas, two years in Georgia and 18 months in Germany, as a clerk. He can attest that there is plenty of paper work in the Army and, for the most part, his only weapons were a typewriter and a word processor. When his second hitch came to an end in November of last year, he returned to his home on Long Island and, in December, got a temporary job at BNL.

Although people may be surprised when he appears, Wilkinson is not surprised at their reaction. He expects it. But he is a calm, friendly person and takes it all in stride. He likes his work and hopes to find a permanent spot one of these days. His long-term goal is administration and he says he will start taking college courses at Suffolk County Community College this summer.



Alex Reben

Reaching Out (Cont'd)

students Dawnita Robinson and John Sampson.

As BNL's Assistant to the Director for Affirmative Action, Blanton oversees this community outreach program. He says the classes "have caught on like wildfire. When we started, our objective was to familiarize students with computers and introduce to them to science in a way that didn't involve the kind of busy work that turns kids off." As proof of how popular these classes have become, the children's parents have requested classes, too. —Mona S. Rowe

Photo at left: Melody Brown (center), BNL, holds Vontrell Brown on her lap while he and (from left) Carl Obie, Shanneikqua Hopson and Vickie Lamb work on a computer program.

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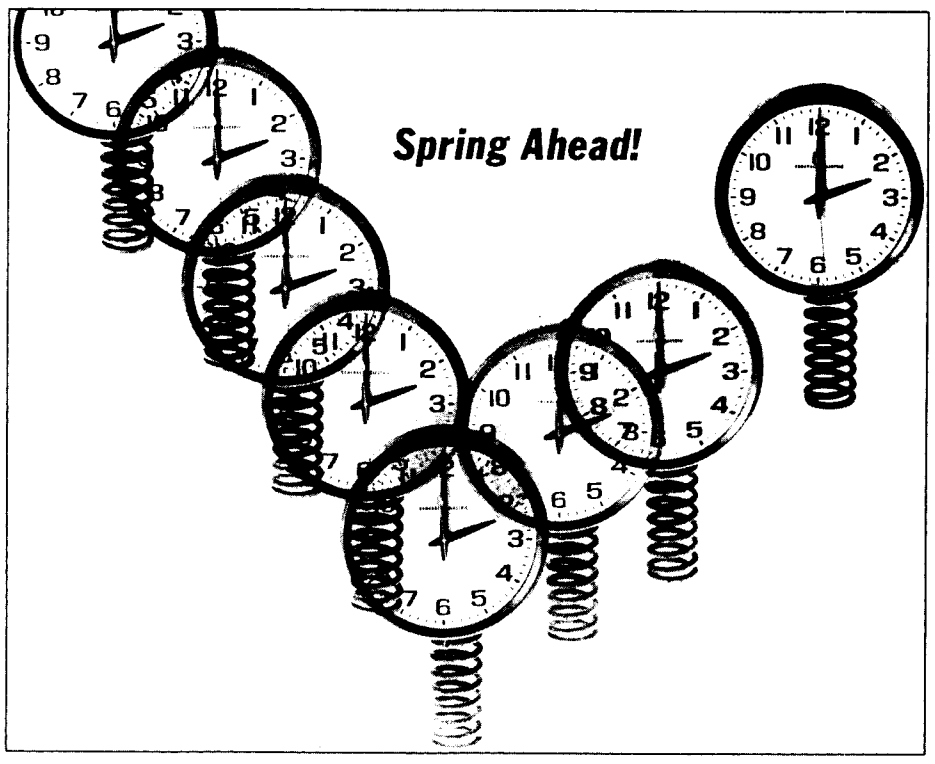

Alex Reben

Daylight Saving Time begins at 2 a.m., Sunday, April 29. Remember to set your clocks ahead one hour.

Hospitality News

Mary Laura Lamont, a Long Island Park Ranger, will join us at our monthly get-together on Tuesday, May 1, at 9:30 a.m. in the Brookhaven Center. She will present a film on the Fire Island National Seashore and will answer questions from the audience.

Wives of employees, guests and visitors are welcome. Please come and bring the children. Babysitting will be provided free of charge. Coffee, tea and danish will be served.

Service Awards

The following employees received service awards during the month of April:

Thirty Years

Stanley J. Majeski .... Applied Science
Joseph M. Scheliga ..... Physics
Patricia E. Towey .... Applied Science

Twenty-Five Years

Donald A. Davis ..... Accelerator
Dennis D. Greenberg ..... Medical
Alvin F. Heylmann ..... Chemistry
Martin S. Zucker ..... Nuclear Energy

Twenty Years

John J. Brennan ..... Plant Engrg.
Leonard D. Hamilton ... Appl. Science
Jack Van't Hof ..... Biology
Hank C. Hsieh ..... Light Source
Henry J. Kapfer, Jr. ..... Light Source
Raymond H. Mayo ..... Plant Engrg.
Robert H. Tallon ..... Accelerator

Ten Years

Doris M. Alkes ..... Technical Info.
Edward J. Brosnan ..... Appl. Math.
Walter Y. Kato ..... Nuclear Energy
William Marin ... Photo. & Graphic Arts
Richard K. McMullan ..... Chemistry
Edith C. Thornhill .... Director's Office
Coles J. Williams ..... Plant Engrg.

Speakers Bureau

Lewis Jacobson (PE), Shirley-Mastic Rotary Club, How to go on a cruise -compliments of LILCO and your oil company, February 7.

Martin Plotkin (Accel.), Copiague High School, Careers in Math and Science, February 15.

Per Dahl (Accel.), Patchogue Kiwanis Club, BNL General and Update on CBA, February 28.

Paul Kessler; Michael Losquadro (AMD), Boy Scouts of America In-School Career Education at Smithtown High School, Careers in Computers, February 28.

R.C. Anderson (DO), Gould Inc. Professional and Management Association, A Look at BNL, March 2.

Frances Brown (Bio.); **Elizabeth Jellett** (Med.), Schreiber High School - Susan B. Anthony Day, Careers for Women in Science, March 15.

William McGahern (HEF); **Avril Woodhead** (Bio.), 18th Annual Science Fair at Shelter Island High School, Science Fair Judges, March 16.

Nancy Fallon (S&EP), Amityville School Career Day, Careers in Computers, April 4.

Avril Woodhead (Bio.), Paul J. Gelinas Jr. High School Science Fair, Science Fair Judge, April 10.

Y.Y. Chu (Chem.), Byron Hill High School Career Day, Careers in Nuclear Science, April 25.

Winner's Circle

Joseph Gatz, Technical Associate II, Medical, suggested that his department request operator manuals and wiring diagrams with electrical and electronic equipment orders. In addition to obtaining his department's approval, he has also gotten the agreement of the Division of Contracts & Procurement to purchase manuals and diagrams if they are available and the cost is reasonable. The advantage of this practice is in the time and money saved by having a BNL technician rather than an outside repairperson service the equipment. He received an award of $50 for his suggestion.

Mary Cooper, Executive Secretary, Applied Mathematics, suggested that the Laboratory use on-site personnel and equipment to convert data when purchasing new word processing equipment. The use of on-site resources enables a significant reduction in time and labor costs. For small requests, Mary herself will perform conversion. She was awarded $25 for her suggestion.

News: the same thing happening today that happened yesterday, but to different people.

Cafeteria Menu

Week Ending May 4

Monday, April 30		
Chicken rice soup	(cup)	.65
	(bowl)	.85
Savory baked chicken & 1 veg.		1.90
Swedish meatballs on egg noodles		1.85
Hot Deli: French toasted ham & cheese club		2.15
Tuesday, May 1		
Beef barley soup	(cup)	.65
	(bowl)	.85
Beef & broccoli stir fry on rice pilau		2.00
Ham steak Hawaiian & 1 veg.		1.85
Hot Deli: Veal patty Parmesan	(bread)	1.95
	(roll)	2.10
Wednesday, May 2		
Split pea soup	(cup)	.65
	(bowl)	.85
Cantonese turkey on rice		1.90
Baked meatloaf & 1 veg.		1.85
Hot Deli: Baked ham & cheddar cheese	(bread)	1.85
	(roll)	2.00
Thursday, May 3		
Cream of chicken soup	(cup)	.65
	(bowl)	.85
Old fashioned beef stew on egg noodles		2.00
Kielbasi & kraut		1.90
Hot Deli: Italian style sausage hero (choose your own topping)		2.15
Friday, May 4		
Seafood chowder	(cup)	.65
	(bowl)	.85
Roast fresh ham & 1 veg.		1.95
Fish and chips		1.85
Hot Deli: Top round of beef	(bread)	1.95
	(roll)	2.10

Breakfast Specials: Effective April 30
(7:30 - 10:00 a.m.)

Mondays	Pancakes w/fruit topping	1.30
Tuesdays	Hot corn muffins	.35
Wednesdays	Sausage omelet	1.30
	Hot biscuits	.35
Thursdays	Western omelet	1.30
Fridays	4 oz. steak	1.40
	Farmers omelet	1.30

CSCF User ID

In order to prevent unauthorized use of CSCF computers, a dial-in security system is being installed. On or about June 1, dial-in access will be denied to off-site users who do not have an assigned User ID Code. To obtain an ID code, pick up a registration form at the CSCF Library, Bldg. 515, or send in the form that will appear in the May issue of the CSCF Newsletter.

Arrivals & Departures

Arrivals

Kathryn J. Lancaster ..... Tech. Info.
Brian A. Rockett ..... Plant Eng.
Mark C. Davis ..... S&ES

Departures

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

Hilton Medina ..... Plant Eng.

Bunny Raffle

Michael Fortner, Guest Research Assistant from Brandeis University, won the chocolate bunny raffled off at the cafeteria last week. He hauled the two-foot high candy rabbit back to the MPS where they were running an experiment. The experimenters polished off part of it over the weekend, and the rest is in the freezer available to other hungry researchers.

Plan for Retirement

The Laboratory will conduct its Preretirement Planning Program during the month of May. Employees unable to attend last year's program who are interested in participating this year, are asked to call Ext. 2883 to make the necessary arrangements.

BERA News

Volleyball

Standings as of 4/23/84

Mixed League

A Division	
Dinkers	20-1
Teddybares	17-4
Upfagrabs	14-7
EPO's	10-11
Mixed Ups	10-11
Semi Tough	8-13
Nuts & Bolts	4-17
TNT	1-20
B Division	
Phoubars	19-2
Bottoms Up	14-7
Screwballs	14-7
Chungas Revenge	11-10
Servers	12-9
Excitons	5-16
CRAW	7-14
Quirks	2-19
Open League	
Phoenix	47-1
Rowdy Radicals	36-12
Generic	14-34
Mana	14-34
Half Lives	9-39

Congratulations to the Dinkers as winners of the A Division, Phoubars as winners of the B Division, and Phoenix as winners of the Open League overall for the 1983-84 Volleyball Season.

Singles Club

The Singles Club will meet after work on Friday, April 27, at the Brookhaven Center lounge for a social evening. All single employees are welcome to join us. If you have any questions, call Chuck Watson, Ext. 5317.

Bowling

Red/Green League

E. Meier bowled a 280 for a 626 scratch/701 gross series, J. Morris 213, J. Ferrante 212, L. Arsen 209, K. Asselta 203.

Pink League

D. Johnson had games of 201/192, E. Kristiansen 189, M-G Meier 187, S. Moore 175.

Purple League

High games were bowled by B. Benson 203, B. Barberich 202/220, J. Roesler 213, D. Adams 215/201, E. MacDougall 199.

White League

K. Riker rolled a 212 for a 600 scratch series, V. Manzella 200, S. Moore 193, P. Lebitski 178, N. Erickson 176.

Basketball

Game 1

Runaways — 76		Coasters — 58	
S. Woodson	6	R. Doty	30
G. Shepherd	9	M. Fulkerson	8
G. Smith	6	B. Jasper	6
S. Gilbert	6	K. D'Amico	12
P. Johnson	27	L. Smith	2
T. James	22		

Game 2
(Championship Game)

Hollywood — 80		Longshots — 70	
E. Meier	16	J. Gaffney	16
L. Walcott	13	J. Garrison	9
M. Colon	18	T. James	20
G. Mack	8	L. James	11
D. Nostrand	21	D. Harris	8
L. Lawrence	2	D. Hall	6
R. Schuman	2		

Runners' Corner

A reminder: spring 5 and 15 kilometer runs will be held at BNL on Sunday, May 20, at 10 a.m. So runners, mark your calendar for a fun day. For more information, call Jeanne Penoyar, Ext. 2614, or Gus Prince, Ext. 5079.

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.

LABORATORY RECRUITMENT: Opportunities for Laboratory employees.

2048. TOOL AND INSTRUMENT MAKER - Central Shops Division.

2049. MATERIAL HANDLERS - (temporary 6/4/84 - 8/31/84) Supply and Materiel Division.

2050. CRAFT APPRENTICE - CARPENTER (2 openings) - Participate in a formal, four-year training program during which time the apprentices receive on-the-job instructions and enroll in outside study programs in subjects related and supplementary to their occupations.

At successful completion of the four-year program, the apprentices will be graduated to the position of Carpenter.

The position description for Carpenter is as follows:

Under minimum supervision lays out, constructs, modifies and maintains buildings and component parts from construction drawings, rough sketches or verbal instructions. Works with wood, wood substitutes and combination materials and flooring, roofing and wall materials.

Uses hand, portable and fixed tools common to building construction trades. Installs cabinets, door frames, window glass, interior finishes and hangs doors. May perform Cabinetmaker duties as required.

2051. CRAFT APPRENTICE - REFRIGERATION/AIR CONDITIONING (3 openings) - Participate in a formal, four-year training program during which time the apprentices receive on-the-job instructions and enroll in outside study programs in subjects related and supplementary to their occupations.

At the successful completion of the four-year program, the apprentices will be graduated to the position of Refrigeration and Air Conditioning Engineer.

The position description for Refrigeration and Air Conditioning Engineer is as follows:

Under minimum supervision constructs, installs, repairs, maintains and operates refrigeration, air conditioning, ventilating and auxiliary and related equipment.

Will perform the same work on air compressors and vacuum pumps whether or not associated with the above equipment.

Applications for the Apprentice Program are available in the Personnel Office.

Autos & Auto Supplies

78 OLDS OMEGA - p/s, p/b, a/c, am/fm, good cond., $1,400. 567-8175.

MOPED - Tomas, 5,000 mi., 2 baskets, 30 mph, 90 mpg, $200. Tony, Ext. 3637.

76 DATSUN 280Z - silver w/black int., excel., 38,000 mi., $4,650. 363-7032.

73 CHRYSLER NEW YORKER - Brougham, p/s, p/b, a/c, power seats, 32,000 mi., orig. owner, legally blind, $1,500. 928-4487

78 FORD THUNDERBIRD - 302-V8, Town Landau, all power, auto., stereo, mags, new radials, brakes, battery, etc., $3,500. Ext. 2492 or 475-8658.

MOTORCYCLE PARTS - & access.; 1983 Maico, 250cc, 400 x 18 Metzeler, ME99 tire. 325-9580 after 6 p.m.

73 VW BEETLE - 22,000 mi. on rebuilt engine, am/fm radio, new tires, $1,300. Jim, Ext. 2050.

82 HONDA - CM250 custom, windshield, saddle bags, luggage rack, 1,000 mi., helmet incl., $1,200 firm. John, Ext. 4417 or 929-8748.

80 HONDA ACCORD - 4 dr., auto., am/fm cassette, 49,000 mi., mint cond., $5,800. Diane, Ext. 7114 or 878-6032 eves.

75 YAMAHA - 250CC, good cond., 2,800 mi., $500. Walter, Ext. 2050 or 281-9105 after 5 p.m.

80 KAWASAKI - 650LTD, red crash bars, exel. cond., must sell, $1,400. Bob, 475-2305 or 283-4741 after 6 p.m.

79 TOYOTA CELICA - 5T-Coupe, 5 spd., sunroof, new radials, am/fm cassette, $3,900. 325-1783.

80 TOYOTA - 4 x 4 longbed pick-up w/cap, extras, excel., $6,800. 878-8255, eves.

PUCH MOPED - 85-90 MPG, Class B, $375. 363-6845.

78 MERCURY ZEPHYR - 6 cyl., 4 dr., a/c, am/fm casette, $1,800. 878-4285 after 5:30 p.m.

81 MERCURY CAPRI - 5 spd., 2 dr. hatch, am/fm tape, sunroof, execl. cond., $4,700. Ext. 4846 or 363-6940 after 5 p.m.

TRAVEL TRAILER - 21', sleeps six, tandem axel, 4 new tires, 8' x 12', add-a-rm., $2,300; pick-up cap, 8' w/beds and heater, sliding front window, $225. Rich, 363-6845.

77 MG MIDGET - $1,500. Bill, 924-0121 after 6 p.m.

BENCH SEAT - for 76 Datsun truck, blue, very good cond., $20. 286-8448.

77 CAMARO TRANSMISSION - engine. Jaime, Ext. 3716.

76 CHEVY MALIBU CLASSIC - runs well, many new parts, best offer. Donna, Ext. 2926 eves or 744-3298 days & weekends.

81 DATSUN 280ZX - white/red leather, T-tops, GL package, like new, 50,000 mi., $10,500. Ext. 3324.

69 CHRYSLER WAGON - V8, auto., reliable transportation, $300; Pinto parts, V6, including auto. trans., starter & more. Dave, Ext. 4428.

70 FORD MAVERICK - golden, a/t, fair cond., $395. Ext. 4516 or 744-8901 eves.

82 KAWASKI DIRT BIKE - KDX 175, excel. cond., $950. 821-1042.

71 TOYOTA LAND CRUISER - running cond. but needs work, many extras. 281-4871 after 5 p.m.

73 DODGE PICK-UP - slant 6, cap, new trans., battery, stereo, low mi., no rust, $1,500. 399-3281.

75 OLDS CUTLASS - p/s, p/b, auto., just inspected, 4 dr. Ext. 7921 or 298-8145 eves.

78 FORD RANGER PICK-UP - p/s, auto., am/fm stereo, many extras, $2,875. 744-6049.

78 HONDA MOTORCYLE - 550K, low mi., excel. cond., extras, $1,000 or best offer. 472-0499.

70 MUSTANG - p/s, p/b, a/c, runs good, little rust, asking $500. Lourdes, 924-3433.

SLIDE-ON TRUCK CAMPER - sleeps 4, stove, oven, sink, toilet, needs new water tank, $400. Patti Bender, Ext. 4613.

71 CAMARO - rebuilt motor & trans., new paint, stereo, just tuned, $1,495. 369-2838 after 5 p.m.

79 MERCURY WAGON - Colony Park, 52K mi., p/s, p/b, a/c, power windows, power door locks, 6-way power seats, more, $4,495 neg. 281-8274.

74 VW SUPERBEETLE - good cond., rebuilt engine, snows on rims, $1,100. Ext. 7311.

76 MERCURY MONARCH - excel. running cond., many extras, $1,700. 744-6423.

73 DODGE DART - 6 cyl., auto., 4 dr., a/c, p/s, p/b, excel. cond., clean in & out, $1,400. Joe, Ext. 7961 or 722-3957 eves.

82 HONDA NIGHT HAWK - 750cc, 4,000 mi., excel. cond., must see, asking $2,000. Ext. 4098.

72 CONCORD TRAILER - 24', sleeps 5, bathroom, kitchen, 30 gal. water tank, gas & elec., windup jack, good cond., $2,500. 475-4831.

72 VW SQUAREBACK - runs, good transportation. Rich, Ext. 4363 or 286-1183 or 924-7238.

71 MERCEDES 220 - diesel, a/t, a/c, excel. cond., $3,750; 77 Olds Cutlass Supreme, clean, 80K, $2,750. 363-7032.

83 HONDA ACCORD - blue, standard, excel., low mi., $7,500. Kevin, 567-6651.

69 TOYOTA COROLLA WAGON - new radials, starter, exhaust, struts, and timing chain, $600. Dave Cook, Ext. 4254.

HONDA XR80 DIRT BIKE - excel. cond., new back tire; BMX Mongoose, racing parts, zap pads, excel. cond. Neal, 286-2435.

75 TOYOTA COROLLA - 4 spd., high mi., rust, runs, $500. Bill, Ext. 3406 or 286-8470 after 7 p.m.

73 DUSTER - runs, needs some work. Rich C., Ext. 3499.

78 HONDA MOTORCYLE - CB550, 4 cyl., 5 spd., roll bar, low mi., garaged, sacrifice, $850. 467-8563, between 7-10 p.m. or Sat. & Sun.

71 TRIUMPH 650 MOTORCYCLE - extra chrome, runs great, $800. Ext. 5109.

77 CHEVY SUBURBAN - 9 pass., 350 cu. in., p/s, p/b, a/t, a/c, 40 gal. tank, 38,000, orig. mi., snows & CB incl., immac. 567-2944.

73 BUICK CENTURY - $250. Ext. 4407 or 654-1854.

VESPA BRAVO MOPED - Super Deluxe, Class B, excel. cond., used very little, $500. Lloyd, Ext. 3381 or 286-1024.

TIRES - (2) Tiempo steel-belted radials, P195/75R14, good for spares. Ext. 3919.

82 PLYMOUTH RELIANT - K-car, am/fm, auto., dealer maintained, excel., must see, must sell, asking $4,500. Ext. 7130 or 744-9611 after 6 p.m.

Boats & Marine Supplies

76 JOHNSON OUTBOARD - 15 HP, long shaft, elec., good cond., $450. Bill, Ext. 7229 or 473-1813.

17' GLASPAR CUDDY - 1975, 85 HP Johnson, CB, E-2 loader, more, $3,200. 727-4573.

20' COBIA - 85 HP Johnson & trailer, many extras, $3,900. 744-5855 after 6 p.m.

21' STARCRAFT - 1975, w/motor, trailer w/elec. winch. 744-9475 eves & weekends.

PEARCE SIMPSON RADIO - direction finder, new cond., $100. Walt M., Ext. 3256.

22' ENSIGN SAILBOAT - great daysailer, excel. cond., $6,500. Joe, Ext. 7961 or 722-3957 eves.

Miscellaneous

GOLF CLUBS - men's starter set, 3, 5, 7, 9, putter, driver, 3 wood in new continental nylon carrybag, $75. Lloyd, Ext. 3381.

MATTRESS & BOXSPRING - for full size bed, $40. Lloyd, Ext. 3952/4803 or 325-0389.

COLONIAL TABLES - (2), pine w/brass and wood lamps; large country print picture. 924-5422 after 5 p.m.

SKIS - Spalding Alfa w/Tyrolia 120 bindings, 170 cm., ladies size 8 boots, poles, very good, $60. 234-8229.

LODEN CAPE - made in Austria, full length, red/black trim, 100% wool, like new, $35.00. Ext. 7288.

GAS GRILL - dual burners, auto. ignite, 20 gal. tank, 1/2 full, used 1/2 season, $60. 281-4541.

SUITCASE - 9 x 19 x 28, blue/red trim, used once, $15; G.E. hair dryer, model VH10, bonnet type w/carry case, $12. Lou, Ext. 4364.

WURLITZER ORGAN - Spinet, solid cherry, model 4300D, multimatic percussion, excel cond., $900. Ext. 3381 or 286-1024.

KINGSIZE HEADBOARD - dark pine, $50; blue-stone mantel, 5' x 10" x 2", excel. $60; coffee table 5' x 18", $40. Ext. 8105 or 929-4701.

NIKON CAMERA - 35mm, SLR, Nikromat, FTN, 1.4 lens, case, elec. flash. 265-5426 after 6 p.m.

JIG SAW - Shop Master w/steel stand, $50. 286-8448.

AM/FM STEREO - 8 track, space age design, table or ceiling, ear speaker connections, white, $20. Carol, 878-0885.

ELECTRIC MOTORS - (2) 110V, 1/4 HP, $15 ea.; (2) 1/20 HP, $10 ea., 1/2 HP, no wiring, $10. Ext. 4745 or 744-3225.

ANTIQUE PARLOR STOVE - $150. 289-5607.

HAM OPERATORS - Heath tranceiver, HW16 with V.F.O., antenna, tuner, SWR meter, coax switch, complete, $200. 589-2648.

MICROWAVE - refrigerator; self-cleaning oven; dishwasher, good cond., reasonable. Jaime, Ext. 3716.

GOLF CLUBS - starter set, 5 irons, 2 woods, Spaulding and 1 Fairway golf bag, both like new, $75. Jerry, 281-5667.

BEDROOM SET - full size bed; triple dresser, chest, (2) nightstands, complete, excel. cond., $400. 929-4886.

MEN'S BICYCLE - 26", 10-spd, new cond., $80. Richard, Ext. 4332 or 3079.

CAMPING FLY - 8 x 10, $25.; Sears Pak-A-Potti, $25. Ext. 4846.

LORRY - w/cage, beautiful, young, tame, red, talks, sacrifice, $350. Irene, 589-5126.

WINDOW BLINDS - verticals, mini's, wovenwoods. Jim Griffin, 281-2849.

REFRIGERATOR - 12 cu. ft., Frigidaire, white, freezer comp., excel. cond., apt. size. Roy, Ext. 4664 or 331-2401.

KITCHEN SET - table w/4 chairs, excel. cond., $50. 363-6912.

GARDEN SUPPLIES - plant trellace, tomato stakes, 10-6-4 fertilizer, auto. cold frame opener, flower pots, wheel barrow wheel & tire, garden sprayer. Ext. 7509.

SPALDING CATCHER'S FACE MASK - new cond., $5. 727-3608 after 5 p.m.

SANYO COMPUTER - 2SSDD, 128K, MSDOS, IBM-PC compatible plus software, $1,000. Alfev, Ext. 2829.

TENNIS RACQUETS - (3) Wilson Prostaff, wood, $20 ea.; Adidas triple racquet bag, $15. 744-6423.

GUITAR - beginner's acoustic, excel. cond., $20. Nick, 286-2435.

STUDENT GUITAR - 5 spd. Raleigh bicycle; Japanese doll w/display case; 10 yrs. National Geographic. Kathy, 286-8470.

SEWING MACHINE - Sears Kenmore, stretch & utility stitches, button holer & all attachments, $139. 286-1904.

COMMERCIAL FREEZER - 17 cu. ft., upright, white, excel. cond., $350. Ext. 5109.

PIANO - miniature, antique, 58 keys, $200; fold away bed, thick mattress, on wheels, $35. 298-4398.

WASHER - Wards, $200; G.E. dryer, $100; range; sofa; water-bed; riding lawnmower & more. Rich, 928-9119 after 6 p.m.

WURLITZER ORGAN - Spinet, solid cherry, model 4300D, multimatic percussion, excel. cond., $900. Lloyd, Ext. 3381 or 286-1024.

MOTORCYCLE HELMET - large, white; heavy duty bumper jack; wooden swivel chair; wooden storage shelves, 72" x 45" x 12"; large metal desk, hanging fluoresent lights, 4'. Ext. 7509.

HI-RISER - w/2 mattresses, head & foot board, excel. cond., $125. 289-5607.

REFRIGERATOR - Norelco, 12 V-DC or 110 V-AC, under counter, very good cond., $700 new, sell for $200. J. Bush, Ext. 4638 or 736-2728 eves.

DINING ROOM TABLE - 42" round w/18" leaf plus 4 cane back chairs, $100. 286-0466 eves.

WASHER & DRYER - Sears Kenmore, 18 lb. capacity, heavy duty, used 1 yr., $600/pr. Ext. 4486 or 878-0480 eves.

VEGETABLES - flowers, 4 and 6/pack, large selection, $.75/pack, delivery week of 5/14. Ray, 727-6818.

ELECTRIC GUITAR - custom design, Verbratto Sunburst, holly body, 6 string, $150 or best offer. Cindy, 924-5533, Ext. 264.

RACING BIKE - Redline 600A, Series 3, chrome, excel. cond., $300. John, 878-8907 eves.

ATARI 2600 - w/9 cartridges, excel. cond., $100. Ext. 4486 or 878-0480 eves.

SPRINKLER - self propelling, $20; juicer; hair dryer, both almost new, $15 ea. Ext. 3701.

BEDROOM SET - Danish modern, triple dresser w/mirror, High Boy, king size headboard & frame, $200. Karen, Ext. 3626 or 286-0428.

PUPPIES - Shih-Tzu, AKC reg., male & female w/shots. Ext. 7727 or 929-4631.

LADIES BICYCLE - 26", 3 spd., front basket, child's seat on rear, $20. 286-1097.

KITCHEN CENTER - Oster, many extras, $125; Mr. Coffee Automatic, $15; (2) sun loungers, $20. Roger, Ext. 2751 after 4/29.

AUTOMATIC WASHER - Sanyo, $125; Sharp 13" color TV, $125; Lady Light iron, $10. Janet, Ext. 2751 after 4/29.

ATARI 400 - w/detachable keyboard, peripherals Atari 850, 810, 410. 744-8868 after 7:00 p.m.

DOCK SPACE - Center Moriches creek w/ramp, season now to 11/84, price neg. 878-8177.

MOBILE RADIO - fm stereo, Craig, model 1901, 2 speakers, $60; G.E. portable hair dryer, model VH10, bonnet, white carry case, $12. Lou, Ext. 4364.

HEADBOARD - king & 3/4, your price; Sitar, Indian, professional, cost $1,500, asking $400; Hindu records, 78 rpm, old, one or all. 929-4701 or 929-8105.

Free

UPRIGHT PIANO - you move it, no stairs involved. Joe, Ext. 5131.

ALUMINUM - for recycling, will bring to Lab. Ext. 3482.

COLOR TV - 19", Sears console, needs work; (2) tricycles; baby crib. 689-9282 eves.

Yard Sales

MANORVILLE - group yard/garage sale, April 27-29, North Halsey Manor Road, large variety, everything, rain or shine.

BELLPORT - 79 Circuit, Sat. & Sun., 4/28 & 4/29, 10-4 p.m., books, trunk, furniture, camping equip, misc., "finds".

WADING RIVER - No. Wading River Rd., 1/2 mi. east of Little Flower, Sat. 4/28, 9-4 p.m., furniture, kitchenware, unique imported antiques & more.

SHOREHAM - 10 Farm Rd., Sat. 4/28, 10-4 p.m., household/outdoor furniture, tools, books, toys. 744-4789 for rain date.

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

ROCKY POINT "TIDES" - 3 bdrm., 1-1/2 baths, l/r, d/r, eik, fr/fireplace, full bsmt., 2-car garage, 15 min. to Lab. 744-4838 after 6 p.m.

N. SHIRLEY/YAPHANK VILLAGE - 8 rooms, custom Colonial on 1/2 acre, f/p in family room, 1-1/2 bath, etc. 924-0960 for reference.

CUTCHOGUE - large ranch, 3 bdrms., eik, d/r, family room w/fireplace, 2 full baths, large deck, 1/2 acre, beautiful landscape w/underground sprinklers, much more. 734-7342.

NEWPORT, MAINE - 18 acres, all heavily wooded, stream, $12,000. 878-0207.

CORAM - Birchwood at Bretton Woods, 3 bdrm. condo., den, formal d/r, 1-1/2 baths, patio, 1/2 block to clubhouse, many extras. 732-6822.

For Rent

WADING RIVER - sublet, 4 rm. apt., 1 person, non-smoker, no pets, Aug. 1 thru Nov. 30, $400/mo. Janet, Ext. 2345 or 929-8152.

GORDON HEIGHTS - room for rent, 15 min. from Lab, $50/wk. 732-3037 for further info.

MILLER PLACE - near Cedar Beach, lovely apt. w/water view, 1 or 2 bdrms., carpeted throughout, kitchen w/dining area, suitable for single person or quiet couple, $550/mo. plus util. 473-3777 eves.

E. PATCHOGUE - month of June, 4 bdrm. house, 500 m from Great South Bay; near marina. 289-9724.

MILLER PLACE - unfurnished apt., 1 bdrm., l/r, kitchen, private entrance, available May 15. Ext. 2537 or 473-1658.

SO. CENTER MORICHES - 3-1/2 lg. rooms, carpet, refrigerator, full kitchen, full bath, private entrance, no children, no pets, 1 mo. security, avail. May 1, $475/mo. includes all, must see. Ext. 4486 or 878-0480 eves.

Car Pools

BABYLON/W. ISLIP - driver needed for on-time car pool, 8:30-5:00. M. Tesla, Ext. 2705.

QUEENS - to join or start car pool. Aron, Ext. 3397.

RONKONKOMA - 2 drivers to join existing pool, 8:30-5:00 p.m., meet near LIE Exit 59. Victor, Ext. 2395.

Wanted

HOUSE TO SIT - free, responsible and caring, any period, any duration, May 21 until Oct. 15. J. Allentuck, Ext. 2412.

PACHYSANDRA CUTTINGS - rooted in flats, large quantity. Walt, Ext. 7154.

SITTER - for 11 yr. old girl, possibly live-in, Bayport. Carol, Ext. 3341 or 472-4029 after 6 p.m.

TRAINS - Lionel, Americn Flyer, accessories, any cond. brings good price. Carole, Ext. 3362 or 924-4097 eves.

MERCURY OUTBOARDS - 1976 and newer, parts or complete, top dollar paid. 654-0880.

SMALL COLOR TV - Ext. 4490 or 289-9724.

24 EXP. PRINT FILM - will exchange Fuji 36 exp. ASA 100 slide film (w/developing). Peter, 698-3822.

STROLLER - convertible sleeper for infant use, Aprica or Perego, front swivel wheels, before July. Kathleen, 281-5605.

TRAVELMATE - to tour USA between June & July, 5 weeks, camping & hiking, have car. Marc, Ext. 3867 or 2570.

LEFTY GOLF CLUBS - Dan, Ext. 2319.

TAPE RECORDER - reel to reel, Sony or other; anvil, any cond. George Hrabak, 589-0819.

UTILITY TRAILER - any cond. Ext. 7130 or 929-8323.

WINCH - 1,000 lb. capacity, for boat trailer; back to back boat seats. George, Ext. 5288 or 878-8177.

ROOM - North Shore, garage for car. Janet, Ext. 2345 or 929-8152.

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