BROOKHAVEN BULLETIN
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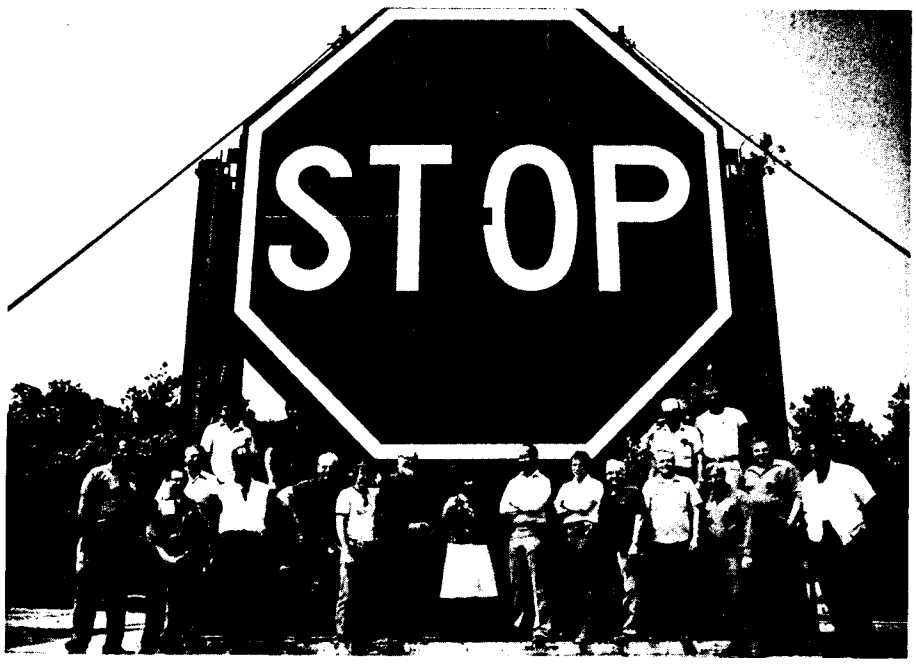
BROOKHAVEN NATIONAL LABORATORY



Mort Rosen

Standing beneath what is probably the world's largest stop sign - the toroid magnets built for neutrino experiment #776 - are some of those responsible for its towering presence.

When the AGS Takes a Rest

The sounds of summer at the AGS and the Linac are different from those heard the rest of the year. Replacing the machines' steady hum and pounding pulse beat are the noises associated with the hustle of a busy work crew trying to beat the clock. Only the accelerators take vacation when the AGS shuts down.

The current shutdown began June 1 and will last two months, until July 31. Said Derek Lowenstein, Deputy Chairman of the Accelerator Department, "The budget for this fiscal year allows us to run the AGS for 30 weeks. We need a minimum of ten weeks a year to do maintenance, make machine changes and turn experiments around. This year, we also stopped running for a week here and there to do studies on using the AGS for new physics or for CBA injection. We were also off for a month last winter to complete installation of the H^- injection system. But this is the longest shutdown period this year."

This summer's work falls into two categories: machine maintenance and modification, and construction of new experiments. Overseeing the first effort is Horst Foelsche, who heads the AGS Division. Foelsche outlined the several important tasks AGS and Linac personnel must complete in this eight-week period.

Machine modification — and the AGS Division's major emphasis right now — centers on the polarized proton project (see story this page). Completing that project this year requires that the shutdown be put to good use. For example, Harold Alexandersen and his Beam Components Group are installing 12 fast-pulse quadrupole magnets in the ring, and engineer Ron Oram and the Linac Group are modifying the low energy beam transport (LEBT) between the ion source and the Linac to accept polarized protons. Also, polarimeters to measure the protons' polarization, are being installed, and the entire magnet ring is being realigned. All this must be done while the AGS is off.

In addition, the AGS is undergoing what is called "absolutely necessary maintenance," which includes resurveying parts of the high energy beam transport between the Linac and AGS, replacement of weakened chambers and pumps in the vacuum system, and work on numerous electrical systems. Although the Siemens motor generator set has operated perfectly since last summer's overhaul, the Power Room Group under Mike Clancy will give the equipment a thorough alignment check. Cooling tower maintenance and repair are also on the job list. Mike Zguris is coordinating the many interrelated activities so that everything will be back together and tested for physics operation by August 1.

Constructing new experiments is one of the assignments of the Experimental Areas Group (EAG), headed by Al Pendzick. The experiment receiving the greatest attention right now is neutrino experiment #776, scheduled for its first run next spring. The detectors for this search for neutrino oscillation are now being assembled in their remote location, north of the AGS, in the middle of the CBA ring. A focusing horn, being built under the direction of Bill Sims, will send a beam of neutrinos to a series of five huge toroid magnets. Pendzick said his group "spent the winter building these magnets because they are so big we had to install them before we could finish the building." Each magnet weighs about 38.5 tons and is 18 feet tall by 7 inches wide. Pendzick likened their construction to "standing a pin on end." But welder Bob Lucas noticed their resemblance to a stop sign. And when the time came for the magnets to be painted, they were painted in that image.

The EAG also repairs existing experiments and modifies primary and secondary beamlines on the experimental floor. "There's a lot of maintenance to do coming out of 20 weeks of continuous running," said Pendzick. In addition, the group is taking the opportunity provided by the summer break to work in the proton transport switchyard area, replacing troublesome cables and modifying the proton beam transport lines. By replacing present quadrupole doublet magnets with longer ones with smaller apertures, Pendzick said, "We will save a fair amount of power, dropping from about 400 kilowatts (kW) to 75 kW."

Summer breaks like the present one are a relatively new phenomenon. "In the past," Lowenstein said, "shutdowns were typically not held in the summer because most university people are off then and could be here while their experiments were being run. But when energy costs began to rise, it became advantageous to run in the winter and work on the AGS during the summer. Still, summer or winter, one thing is certain — when the AGS shuts down, no one is idle."

— Anita Cohen

Source Sets New Record

A new world record for output of negative polarized ions was achieved here on June 17, when beam currents in excess of 12 microamperes (μA) were measured in the source now being developed to provide polarized protons to the Alternating Gradient Synchrotron (AGS).

In an Accelerator Department memo, Theo Sluyters, head of the Polarized Ion Source Group, described this achievement: "We measured spin polarized negative beam currents of more than 12 μA in a 400 microsecond beam pulse. This beam current is four times the current achieved in similar devices elsewhere." The previous world record of 3 μA was established by Dr. Willie Haeberli of the University of Wisconsin.

Providing this current is a polarized negative hydrogen ion (H^-) beam, consisting of hydrogen particles which all have the same spin alignment. The spin of a particle can be compared with the motion of a ball with an angular momentum and a direction. Later this year, a polarized H^- beam will be accelerated in the Linac (linear accelerator) for injection into the AGS. Before entering the synchrotron, the beam will pass a thin piece of carbon foil in which the ions will lose their electrons, leaving only polarized nuclei (protons) to circulate. This will be the first beam of polarized protons to accelerate in the AGS, and it will open to physicists many new exciting avenues for nuclear physics research.

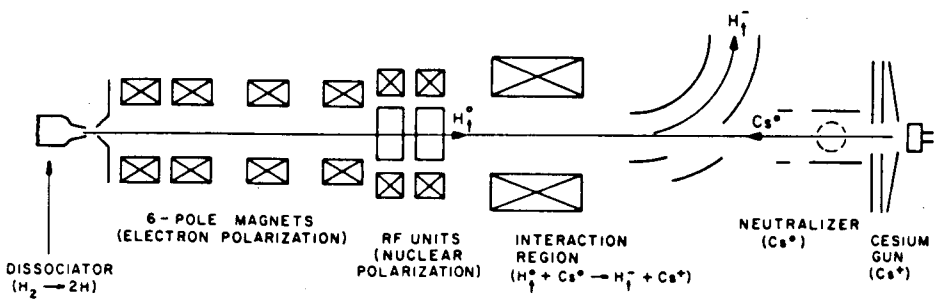
The creation of polarized H^- beams is more complicated than the production of standard negative or positive ion beams. The process begins with the introduction of hydrogen molecules (H_2) into a dissociator (see diagram), which separates them into two hydrogen atoms (2H). A series of sextupole magnets and radio-frequency transition units weeds all particles out to create neutral atoms with the same polarization. In order to transform these neutrals into negative ions, the beam collides head-on in the interaction region with a 40 keV neutral cesium beam, which acts as a donor of electrons. From the products of this collision, the polarized negative hydrogen beam is extracted and deflected 90 degrees into the beam transport channel.

Last September, Sluyters' group (a subdivision of the Neutral Beam Development Group headed by Krsto Prelec) began working on the polarized ion source, originally under development by an Argonne-Yale team at Argonne National Laboratory. The source was sent to BNL in early 1982. There was still a great deal to be done, but the Polarized Ion Source Group — James Alessi, Ahovi Kponou, Basil DeVito, Robert Larson, Ron Clipperton, Harry Ackerman, Daniel McCafferty, Fred Usack and Sluyters — met the challenge. "It was a lot of fun and very gratifying," said Sluyters, "because we made all our milestones right on schedule. This one was particularly important because by reaching 12 μA, we have reached an operating level for running polarized protons in the AGS."

Although he credits the entire group for this accomplishment, Sluyters did say, "The record beam current we reached is mainly due to the new cesium beam injector that Jim Alessi designed and matched to the polarized source unit."

The group is now intent on reaching their next milestone — an October demonstration of an operational polarized source ready for installation in the Linac. Later in the year, Sluyters expects still higher peak beam currents. But, he said, "The real challenge for the group will be to reach operating current levels in the milliampere range so that the experimenters will have the choice of operating with spin oriented protons without losing their present unpolarized proton beam luminosity."

— Anita Cohen



This block diagram of the polarized ion source shows how neutral, polarized hydrogen atoms (from left) intereact in a colinear fashion with a neutral cesium beam (from right) to form negative polarized hydrogen ions.

Mort Rosen

Gathered around the object of their efforts are the members of the Polarized Ion Source Group: (back, from left) Bob Larson, Basil DeVito, Ahovi Kponou, Mike O'Donnell (summer student), Fred Usack; (front, from left) Theo Sluyters, Jim Alessi, Ron Clipperton. Missing from photo: Harry Ackerman and Dan McCafferty.

BNL, SUNY Host Summer School

From all over the world, scientists and students in particle physics, accelerator physics and related fields, will come to Long Island next week for the Third Summer School on High-Energy Particle Accelerators, sponsored jointly by the U.S. Department of Energy, the National Science Foundation, the State University of New York at Stony Brook and BNL. The program, which will run July 6—16, will feature lectures and seminars by some of the most distinguished physicists in the U.S. and Europe.

The Summer School will be divided into two parts, with morning sessions at SUNY Stony Brook and afternoon sessions at Brookhaven.

At the BNL afternoon Symposia, R. Palmer (BNL), P. Sprangle (NRL), D. Prosnitz (LLL), T. Tajima (U. of Texas, Austin) and P. Wilson (SLAC) will discuss New Accelerator Ideas; while the State of High Energy Physics 1983 will be addressed by J.D. Bjorken (Fermilab), M. Peskin (SLAC), C. Rubbia (Harvard/CERN), N.P. Samios (BNL), H. Schopper (CERN), Ch. Llewellyn Smith (Oxford), S.C.C. Ting (MIT/DESY), A. Tollestrup (Fermilab), W.A. Wallenmeyer (DOE), and G.A. Voss (DESY).

SUNY Stony Brook will host a series of morning lectures devoted to the basic physics of particle accelerators, delivered by B. Autin (CERN), J. Bisognano (LBL), K. Brown (SLAC), E.D. Courant (BNL), D. Edwards (Fermilab), R.L. Gluckstern (U. of Maryland), R. Siemann (Cornell) and W.T. Weng (BNL). On this same subject, F. Beck (CERN), A. Chao (SLAC), M. Gormley (Fermilab) and L. Evans (CERN) are scheduled to lecture at BNL. Also at SUNY, C.W. Fabjan (CERN), T. Ludlam (BNL) and W.J. Marciano (BNL) will give courses in elementary particle physics.

At a banquet the second Thursday evening, the Summer School participants and instructors will be addressed by A. W. Trivelpiece, Director, Office of Energy Research, DOE. A round table discussion on an ultra high energy collider is scheduled for the following evening. Participating in the discussion will be J.D. Bjorken, N.D. Pewitt (Office of Science & Technology Policy, Executive Office of the President), P.J. Reardon (BNL), C. Rubbia, M. Tigner (Cornell) and S.C.C. Ting.

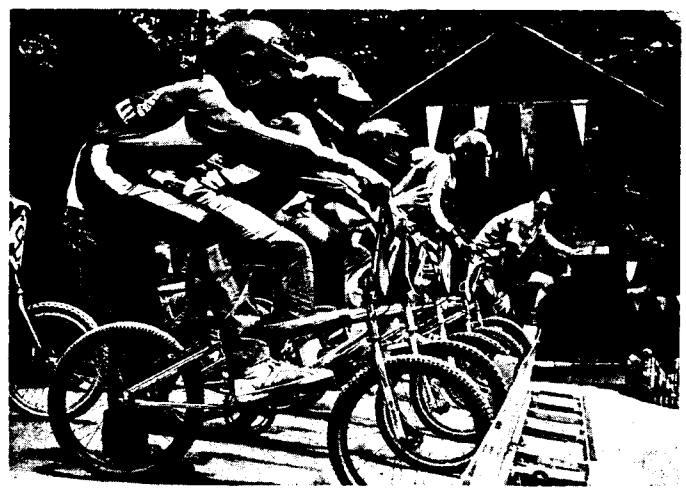
The Summer School program, which began in 1981, was inspired by a 1979 HEPAP subpanel, which saw a need to develop methods for attracting scientists and students in high energy physics to work on particle accelerators. The previous sessions were held at Fermiblab and at SLAC.

P.J. Reardon is Director of the 1983 school and M. Month (BNL) is Chairman of the Organizing Committee, which includes J.D. Bjorken, H. Grunder (LBL), V.W. Hughes (Yale), R. Huson (Fermilab), B. McDaniel (Cornell), C. Pellegrini (BNL), B. Richter (SLAC), R. Schwitters (Harvard/Fermilab) and R.R. Wilson (Columbia).

For more information about the Summer School, contact Paula Hughes, School Administrator, at BNL, Ext. 4619.

In Memory of Warren Winsche

The Department of Nuclear Energy and the Department of Applied Science will host a reception and tea in memory of Warren Winsche on Thursday, July 14, in Room B of Berkner Hall at 3:00 p.m. All his friends and colleagues are welcome to attend.



"These bikes cost anywhere from one hundred twenty-five to five hundred dollars," says Bruce Mulligan (right), at the controls of the starting gate.

On Your Mark . . . Get Set . . . PEDAL ! ! !

Tackling the first table top.

John Post (left) and Bill Knoernschild at the starting booth overlooking the $ worth of trophies to be awarded that d.

—photos by Reben

"Up here!"

I looked up. And standing in a booth was John Post with a loudspeaker mike covered in his hand.

"Why don't you come up?"

I hopped over a rope which was getting lower as race time approached. Several bikes were already pushing up the hill. Mongooses. Shimanos. Redlines. Torkers. PK Rippers. Huffys. And Schwinns.

I sat down in the booth which was next to the starting gate.

"We've got someone who wants to buy a set of GT handle bars," announced Post, who as vice-president of Pedal-Power BMX, Inc., spends 30 hours every week from April to November preparing the 850-foot track for each Sunday's competition. And for forty other hours a week he's a technical supervisor for the Electron Support Group, which is responsible for injection and extraction equipment at the AGS.

Post became involved in bicycle motocross racing three years ago when his partner, Bill Knoerschild, asked him to design an electronic starting system for a private track Knoernschild was building in Miller Place. The track eventually was forced to close because of its location. Post then approached the Town of Brookhaven with the idea of constructing a track on town property. The result was the "BMX at Shoreham"Track, which opened September 5, 1982 at the Shoreham Recreation Center.

It was a little before noon. The track had been open since nine o'clock when racers, ranging in age from six to sixteen, began registering for the afternoon's events.

"Could we have a field judge please?"

A parent volunteered and donned a fluorescent marker over her blouse.

"Thank you. We also need someone to wet down the first table top and the sweeper turn."

A parent turned on the hose.

On Saturday, Post and his partner, Bill Knoernschild, had packed a layer of clay over the track. During practice, racers were riding too quickly around the track. And a few fell.

"You're better off coasting than falling," said 13 year old Jimmy Leach. A national champion sponsored by Jag bicycle manufacturer, Leach has won every race in his year-long career, except for one a few months ago, when he was pushed going around a turn and fell.

A twelve year old carrying a Mongoose bicycle frame next walked up to the booth. He had a Mohawk haircut.

"Are you selling it, son?" asked Ed Wormold, the assistant starter.

"Yes."

"He'll be with you shortly."

Post was talking over the intercom connected to the scorer's shack located next to the finish line.

"How's everything going in there, girls?" asked Post. "We'll begin as soon as you get the moto sheets to me."

"We're almost ready."

He shut off the intercom and flipped on the loudspeakers.

"We've got a Mongoose frame selling for... How much do you want for it?"

"One sixty-five."

"We've got a Mongoose frame selling for one hundred sixty-five dollars. Anyone interested can come up and take a look at it."

It was twelve seventeen, and it was time to begin. "Will all racers please get off the course. There is to be no more practicing. Stage races one through six at the bottom of the hill."

Eight bikes were lined up at the top of the hill with their 20-inch wheels touching the aluminum starting gate. Bruce Mulligan stood next to Post in the booth. In front of him were the controls for the electronic starting system.

"Riders ready. Wheels against the gate. Watch the lights."

Red. Yellow. Green. The 16-inch high gate dropped to the ground. And the racers, wearing helmets, face masks, and elbow and leg protection, began pedaling as if they were running a sprint. They never slowed down. And never sat down.

Over the first table top (a four-foot jump with a 12-foot flat center) they disappeared. Safely on the ground, they're slowed by an one-foot jump before entering the left sweeper turn which feeds into a four-foot sharp jump followed by a high-banked S turn. Over a second, smaller table top. Only a two-foot mogul and fifty feet separated them from the finish line. It was all over in 30 seconds.

There were 48 motos scheduled that afternoon with a minimum of four and a maximum of eight racers in a moto (three heats). The first four finishers of each of the three heats are awarded points. Their totals are then tabulated to determine who will compete in the semi-finals and eventually in the finals. The first four finishers are then awarded trophies.

Post touched a handkerchief to his forehead. Seven riders were at the top of the hill with their wheels touching the aluminum gate. Ready to announce the next race, he put the handkerchief into his pocket and looked at the track.

"Only 152 races to go." And he smiled.

(The East Coast WWBMXA National will be held at the Shoreham track July 2 and 3. Racers of all ages, including professionals, will be competing. Admission is free and open to the public.) — Steve Eisenberg

Discussion Group

The Discussion Group on Nuclear Arms will meet at noon on Frid July 8 in Room B, Berkner Hall. Ma tin Blume, Associate Director, will talk to the group about "Laboratory Research Programs and Facilities: How They Get Started and How They Are Used."

Notice

Because of the holidays on July 4 and 5, an abbreviated version of the Bulletin will be published on July 8. All items for that issue must be received at the Bulletin offices before 10 a.m. on Wednesday, July 6.

In Memoriam

George Starke, Technical Associate at the National Synchrotron Light Source Department, died after a short illness on June 22. He was 56 years old. Starke was assigned to the Computer and Diagnostic Group and was instrumental in providing many of the diagnostic tools utilized at the Light Source. He came to the Lab tory on October 14, 1957. He is vived by his wife, Lourdes and four children, Martin, Richard, Lauren and Leslie, and one grandson, all of Baiting Hollow; his mother, Martha Starke, Riverhead; and a sister, Helen Kelly, California.

BROOKHAVEN BULLETIN

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Tour Stars NSLS

Visitors to BNL next Sunday, July 10, will find something special going on, as the Lab's Summer Tour Program focuses on the National Synchrotron Light Source (NSLS). As an introduction to the Lab's newest major facility, visitors will hear physicist Roger Klaffky deliver a slide-illustrated talk about the NSLS and the research done there. Then, during a bus tour of the BNL site, they will visit Bldg. 725 for a first-hand look at the experimental area surrounding the VUV ring.

In addition to these special features, the July 10th tour, like the others scheduled on Sundays this summer through September (except for holiday weekends), will include other slide shows and a guided walking tour of the three-story Exhibit Center in Bldg. 701. The complete tour takes about 2-½ hours.

On tour days, visitors can arrive at BNL any time between 10 a.m. and 3 p.m. and tours will be offered continuously throughout the day. On July 10, the NSLS lectures will begin in Berkner Hall at noon, 1 p.m. and 2 p.m. There is no admission charge and children are welcome.

Notice To Visitors

The Public Relations Office has a limited supply of The Long Island Guide available for summer visitors. The Guide is published by Newsday and gives comprehensive information on where to go and what to do on Long Island. For your copy, call Ext. 2345, or stop by Public Relations in Bldg. 134.

Summer Specials For Visitors

Great Adventure: August 6. Price $25 — includes transportation, admission to amusement park and safari, snacks and soft drinks. Deadline for reservations — July 16.

New York City Walking Tour: July 16. See Manhattan, from the Statue of Liberty to Central Park. Train fare $10.80 from Mastic-Shirley, + subway tokens, admission fees to Statue of Liberty, Empire State Bldg., United Nations. Reservations by July 14.

Roller Skating: July 21. 7:30 p.m. Skating party — free transportation to rink. $4.75 admission at door includes skate rental, wine and cheese. Reserve bus seat by July 15 with Michael Shepard, Ext. 2319 (8:30 a.m.-5 p.m.), Ext. 2516 evenings.

For Great Adventure and NYC tour, contact Renee Flack, Ext. 3316, Bldg. 460.

Beach Bus

If you are living on site and are without a car, at least you can get to the beach. The Coram Line Service is running a bus to Smith Point, daily (except Sunday) until September 3.

The bus must be flagged at Longwood and William Floyd, and leaves from that point at 9:06 a.m., 11:06 a.m. and 1:06 p.m. The fare is $1.50 one way. The bus also goes to Port Jefferson and other North Shore points. For more information, call 732-5518.

Service Awards

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

Thirty-five Years

Andrew Brems, Jr. ..... P&GA
Ernest M. Guettinger ..... Reactor
James H. Klein ..... Nuclear Energy
DePuyster Pitcher ..... Reactor
Daniel Stelmaschuk ..... S&M
Michael F. Zukas ..... Reactor

Thirty Years

Gerald Farber ..... Applied Science
Michael P. McKenna ..... Reactor

Twenty-Five Years

Alexander J. Elia .... Instrumentation
Edward Leitgeb ..... Plant Eng.
Albert M. Roberts ..... Physics

Twenty Years

Barry S. Arbeit ..... App. Math.
Thomas J. Blair ..... Accelerator
Henry G. Bornbusch ..... Plant Eng.
Per F. Dahl ..... Accelerator
Frank DeVito ..... App. Math
Ralph C. Helmig ..... Physics
Enrique Jimenez ..... Central Shops
Randolph Philips ..... S&EP
Harold W. Sauter ..... Physics
Joseph C. Schuchman ..... NSLS
Richard J. Tache ..... Reactor
John E. Verschure ..... Plant Eng.

Ten Years

Ragna A. Davidsen ..... Medical
Richard R. Froelich ..... Plant Eng.
Joyce M. Robinson ..... S&EP

NYC Train Trip

The Hospitality Committee-sponsored LIRR trips to New York City for the remainder of 1983 are as follows:

July 6, 20, 31
August 3, 17, 31
September 7, 21
October 5, 19
November 2, 26, 30
December 7, 21

Tickets are $3.50 each for adults; children under five years of age ride free. Checks, made payable to BNL, should be sent to P.O. Box 322, Upton, N. Y. 11973, and are due the Thursday before the trip. Cancellations must be received no later than the Monday preceding the trip. If you fail to cancel on time, or if you miss the train, your money will not be refunded.

The train leaves at 7:55 a.m. from the Patchogue LIRR station. If you are planning to board at another station, you must indicate this fact when sending in your fare.

An announcement will appear in the Bulletin if any Saturday trips or special side trips are scheduled during the year. The train for the Saturday trips leaves the Patchogue LIRR station at 8:31 a.m.

Diners Note

The cafeteria will be open from 9 a.m. until 2 p.m. on Saturday, Sunday, Monday and Tuesday, July 2, 3, 4 and 5, due to the holidays.

The Center Club will be closed on Sunday, July 3, reopening Monday, July 4 at 5 p.m.

The Vended Food Service in Bldg. 912 will be in operation continuously.

Mort Rosen

Plant Engineering's Mark Culp has donned hard hat, coveralls and a respirator to show Lab employees what they will be seeing at manholes around site, from now through January. Workers will be removing asbestos insulation wrapped around steam piping in steam manholes and replacing it with foam glass insulation. Valves and flanges will be insulated with removable covers made out of fiberglass, like the one held by Ed Murphy. Project engineer Culp says the manholes will be roped off and clearly marked with warning signs while the asbestos is being removed.

Arrivals & Departures

Arrivals

Josephine Fanizza ..... P&GA
Alice M. Jimenez ..... Contr. & Proc.
Linda M. McCarthy ..... Plant Eng.
Joy A. Morris ..... Accelerator
Donna K. Riendeau Contr. & Proc.
Mauro A. Squicciarini ..... Plant Eng.
Gavin M. Watson ..... NSLS

Departures

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

Virginia P. Austen ..... Physics
Walter F. Brander ..... Medical
Gerald Farber ..... Applied Sci.
Ruth P. Francois ..... Physics
George T. Harrison ..... Plant Eng.
Robert T. Johnson ..... Central Shops
Maddie B. Miles ..... Staff Services
Irene Ozols ..... Physics
Francis C. Pechar ..... Physics
Powell Richards ..... Medical
Lucille F. Rose ..... Nuclear Energy
Mary A. Simack ..... Physics
Robert Von Hollen ..... Budget Office
Phyllis Wolosin ..... Physics
Robert W. Zurmuhle ..... Physics

Mow With Care

Push that lawnmower gently, cautions the Cooperative Extension Association of Suffolk County. Clipping the bark on trees not only mars the trunk's looks, but also makes an easy entrance for diseases and insects.

To avoid bumping or bruising a tree trunk, dig out a small circular area around it (for small trees, about 12 inches wide). In that area, use ground covers such as pachysandra, vinca or euonymus, or a two-inch layer of mulch. Some homeowners prefer to cover the basin with a sheet of black plastic, then add the mulch.

Softball

Scores for Week of June 20

League I

Blue Jays 11 — Ice Pops 9
Big Sticks 10 — AMD 6
Ravens 17 — Phoubars 16
Six Pax 12 — Moles 2

League II

Medical 9 — Random Errors 6
Titans 9 — Lights Out 1
Roga 29 — Light Source 3
Magnuts 10 — Dirty Sox 9

League III

No Names 7 — Nads 5
E/Z Riders 9 — TNT 8
Survivors 14 — Mole-Esters 7

Makeup Games:

E-Z Riders 15 — TNT 5
Survivors 15 — Mole-Esters 6

League IV

Septembers 30 — Underalls 4
Random Sample 18 — No Feedback 17
The Source 15 — Turkeys 4
Spacekadets vs. Mudville Sluggers
Game postponed
Who Cares 18 — Who's On First 11

Pool And Gym Hours

Pool

The pool will be closed during the holiday weekend July 2 through 5.

Summer Schedule
(Starting July 6)

Monday through Thursday
11:00 am to 1:30 pm employees only
1:30 pm to 3:00 pm children's lessons
3:00 pm to 9:30 pm employees/ families/guests

Friday
11:00 am to 1:30 pm employees only
1:30 pm to 3:00 pm children's lessons
3:00 pm to 4:30 pm children's pool special
4:00 pm to 9:30 pm employees/ families/guests

Saturday & Sunday
1:00 pm to 6:00 pm employees/ families/guests

Entrance Fees

Daily Admissions:
$1.25 employee
$1.25 family member
$1.75 guest

Season Tickets: (valid to September 4)
$23.00 individual
$33.00 family
Season tickets are sold at the pool during open hours to employees and immediate family members.

Gym

Closed Saturdays and Sundays throughout the summer months.

July 4 and 5
Holiday closing

Starting Wednesday, July 6
Normal summer schedule
11:00 a.m. — 1:30 p.m. (employees only)
5:00 p.m. — 9:30 p.m. (general activities)

Summertime Is T-Shirt Time

T-shirts commemorating "Brookhaven National Laboratory — Summer '83" are now being made available to all employees, students and guests for only $5 each, including tax. The T-shirts are blue with white printing and are made of 50% cotton and 50% polyester for minimum shrinkage. They are available in unisex adult sizes: small (34-36), medium (38-40), large (42-44), extra-large (46-48); and unisex children's sizes: small (6-8), medium (10-12) and large (14-16). T-shirts must be ordered on or before July 15, and each order must be accompanied by payment in the form of either cash or a money order made payable to "Renee Flack — T-Shirts '83." No personal checks please. Bring or mail orders and payment to Renee Flack, Bldg. 460, Ext. 3316. Please allow two weeks for delivery.

Classified Advertisements

Autos & Auto Supplies

73 BUICK CENTURY - 50,000 miles. Asking $1,000. 751-1401.

71 FORD PINTO - Mike, $375. 698-5649.

74 TRIUMPH SPITFIRE - Emil, 744-6056.

72 CHEVY IMPALA - $300; 1972 Buick, $300. Lou, Ext. 4639 or 277-2671 after 6 p.m.

74 DATSUN B210 - $400. 331-2419.

14" RIMS - fits Chevy or GM cars, $5. Ext. 3392 or 475-8330.

TIRES - (2), B60-13, on Ansen Spint mag wheels, $75/pair. Ext. 4615 or 475-6981.

TRAILER HITCH - for 1976 Olds Spitfire. 732-6647.

61 STUDEBAKER - Lark VI, $650. Kevin, 281-8031.

78 HONDA - M/C 400 Hondamatic, $850. Ext. 2172 or 744-4386.

VOLKSWAGON TRAILER HITCH - for Beetle, $15; Volkswagon transaxle, $25. Gene, Ext. 3254 or 363-9527.

76 HONDA CVCC - $1,500. Ext. 5131.

78 HONDA - 550cc, $1,150. Ext. 7654.

80 TOYOTA - $6,000. Bill, 929-4678 eves.

81 KAWASAKI - 440. Ext. 5212.

79 MUSTANG TURBO - $4,200. Ray Patuano, 666-0587.

74 SUZUKI - 500cc, $425. 286-3923.

72 CAPRI - 744-4838 after 6 p.m.

67 PLYMOUTH SATELLITE - $350. Waren, 979-7144 eves.

76 BUICK CENTURY - stationwagon, $2,400. 581-7656.

77 CHEVY CAMARO - $3,300. Ext. 7125.

79 HONDA MOTORCYCLE - CM400T, $1,000. Ext. 7125.

72 VW BUS - asking $1,200. 654-2076.

VW PARTS - Augie, Ext. 2419 or 289-4211 eves.

72 HONDA MOTORCYCLE FRAME - 750cc. 654-2076.

73 VW TRANSMISSION - automatic, $100; (1) Jeep CJ tire, $10; CJ rag top boot, new, $20. Toni, Ext. 2907.

76 DODGE ASPEN WAGON - $1,750. Leonard, Ext. 4457.

78 DODGE CHALLENGER - asking $3,800. Dick, Ext. 4313 or 929-4551.

76 MERCURY MONARCH - $2,100. Ext. 7160 or 736-1525.

70 PLYMOUTH FURY III - $300. Ext. 2381 or 2384.

77 FORD GRANADA - Clarice, 288-3436.

78 PLYMOUTH VOLARE - $2,700. Ext. 4379 or 924-3783.

76 HONDA CVCC HATCHBACK - $1,500. Joe, Ext. 5131.

77 OLDS CUTLASS - $2,800. Victor, Ext. 2284.

68 PONTIAC WAGON - $200 or best offer. Ken, Ext. 5042.

66 BSA MOTORCYCLE - $399; sissy bar, $10. Frank, Ext. 2022 or 399-4480.

73 FORD GALAXIE 500 - $875. 277-4091.

76 CHEVY CAMARO - $2,000 or best offer. 286-1378 or 286-8041 after 5 p.m.

75 PLYMOUTH VALIANT - $1,200. Rich, Ext. 4134.

71 CHRYSLER - $750. Tom, Ext. 4084 or 878-1060.

74 CHEVY IMPALA - $1,00. Tom, Ext. 4581.

74 AMC GREMLIN - asking $500. Ext. 7707.

Boats & Marine Supplies

OYSTERMAN - 23, fiberglass skipjack, sloop-rigged, fully equipped, 8 HP outboard. Ext. 7994 or 286-8915 after 6 p.m.

SAILBOAT - 14' Snark, styrofoam for harbor/lake, $150. 286-0241.

BOW RAIL - SS, $25. Frank, Ext. 2022 or 399-4480.

Miscellaneous

CASSETTE TAPES - BASF, C-90, Pro II CrO_2, $2.75 ea. Ext. 2521.

SOFA - large, blue, good cond., $30; ping pong table, $50. 929-4268.

POOL DECK - 3'x3', for above ground 4 ft. deep pool, side mount, removable ladder & bench on back, $25. 281-0360.

WATER PUMP - self-contained w/tank, Sears Best; Kenmore 14" floor waxer/scrubber, 2 spd., w/attach. Ext. 3392 or 475-8330.

SAM'S PHOTOFACTS - $3 ea.; TV repair parts, all new, 50% off, wholesale; test equipment, B&K digital frequency counter, B&K CB service master. 732-6647.

FORMICA COFFEE TABLE - rectangular, good cond. 589-4218.

BAMBOO STAKES - all sizes, cut your own. 363-7032.

SHEFFIELD SILVER PLATED SET - 6 cup, 4 piece; IBM electric typewriter, also Royal Standard, office model. Ext. 3688 or 363-7032.

INVADER RACING GO-KART - blue, 5 HP, Briggs, Spring National winner, setup for rookie class, $1,200. 475-1388 eves.

DRAPES - burnt orange for 5'x10' bay window, floor length, with traverse and shear floral pattern inserts, $50. 281-0360.

GIBSON REFRIGERATOR - top freezer, white, excel. cond., $125. B. Sick, Ext. 2897 or 473-3693.

REFRIGRATOR - 1.7 cu. ft., TR-607, almost new, $70. Ext. 4495.

ANTIQUE DINING ROOM SET - large table, china closet, buffet, liquor cab., solid cherry mahogany, $800. Joe, Ext. 7961 or 878-2655 eves.

BATHROOM BASIN - American standard, faucets and pop-up waste, complete in carton, $40. McKenna, Ext. 2350 or 363-6379.

COLONIAL WING BACK SOFA - dark pine trim, need recovering, $20; matching chair, fair cond., $25; ottoman, needs recovering, free; wood port-a-crib, no mattress, $10; Swingomatic infant swing, $8; baby ride-a-horse, $10, all good cond. Judy, 698-4882 after 5.

DINING ROOM SET - colonial, maple round table with leaf, 4 high back chairs with rush seats, $225. Judy, Ext. 2145.

MARE - Bay, white mane, 15-1/2, hands, 14 yrs. old, tack included, $800. Ext. 2766.

DINING ROOM SET - Parkay table, 6 high back wought iron chairs, in excel. cond., $300. Tony, 281-0350.

CLASSICAL GUITAR CASE - black w/yellow stitching, $15. Nick, Ext. 4701.

FURNITURE - contemporary couch, 90"; (1) chair; (2) lamps, like new, $225. 289-1627.

REFRIGERATORS - (1) Fridigaire, $75; (1) Hot Point, $80, both upright, very good cond. 289-3848.

ANTIQUE SPINDLE-BACK ROCKER - oak, w/carving, $75; antique trunk w/brass fittings, $45; both in great shape. 475-2090 eves.

RACER - Ross Apollo, 20", $30; 3 wheel lades bike, $85; lawnmower, 22", $30. Dick, Ext. 3499 or 589-9103.

POOL - 15'x30' oval, aluminum, good cond., includes accessories, $395. Walt, Ext. 2907 or 698-0576.

AMPLIFIER - Palomar Bi-Linear, 10,11,15,20,40 meter bands, am/fm, ssb, max output, 450 watts, $300. 878-6692.

DINING TABLE - (4) chairs, dark brown oak, $125. Ext. 2487 or 928-6930.

REFRIGERATOR & DRYER - both run well, $50/ea. Roy, Ext. 4664 or 744-8779.

SCREEN - home movie/slide, good cond., $10. Victor, Ext. 2395.

TWIN LENS - Rolleiflex, w/case, excel. cond. John, Ext. 5152 or 281-2471.

KITCHEN KNIFE SET - 7 pc., new, $11; Norelco air cleaner; (2) chairs; dinner set. 924-0565.

COOL BOX - 15 qt. capacity, used 1 week, new $25, sell for $8. 282-3074.

OAK CHAIRS - (4) pressed back, cane seat, $85. Eileen, Ext. 3051 or 289-5607.

SIMON & GARFUNKEL TICKETS - August 6, Shea Stadium, 2 seats. Jayne, Ext. 7597.

SYNTHESIZER RECEIVER - Sansui, quartz, R-505; Sansui D-55M cassette deck; (2) Sharp speakers, $430. Victor, Ext. 2284.

SYNTHESIZER - Multivox MX2000, excel. cond., $400. 363-2614 after 6 p.m.

FREEZER - Fridigaire, upright, 18.7 cu. ft., frost-free, excel. cond., $200; butcher block round kitchen table, 42" dia., (3) leather swivel chairs, $200. 363-6121.

COLOR TV - Hitachi, 19", A1 cond., leaving the country, $140. 924-0318 after 6 p.m.

MAGNIFIED LENS - Detecto Scale, new, makes numerals easier to see, manual adjustment, gold base, pick & gold flecked vinyl mat, gold handle with teflon, buttons to store on edge, $15. T. Malloy, 289-6490.

PORTABLE SCANNERS - Realistic, Regency, both new, many accessories, must sell immediately, very negotiable. Arthur, Ext. 3417.

AXEL - trailer type; small table saw; old cameras. 654-1291.

SANDALS - black leather, size 9M; Bass running shoes, size 7-1/2M, both brand new, $15/ea. S. Spark, Ext. 5206.

PLAYPEN - $17; Fisher-Price toys, music box mobile, $16; Walker-Century Super Coupe, $21. 924-0565.

CANVAS TOP - for 1976 CJ7 Jeep, beige, $200 or best offer. 286-1378 or 286-8041 after 5 p.m.

JR. DINING ROOM SET - (6) chairs, modern, $300. 588-6215 after 6 p.m.

MARIGOLD PLANTS - mixed colors, $1.10/dozen, avail. Mondays. Bill Stars, Ext. 3371, 3172 or 298-9648 eves and weekends.

MASON JARS - (4) cases, quart size, excel. cond., make offer. Marlene, 744-5801.

POOL FILTER - 3/4 HP, earth type w/thru-wall skimmer, vacuum, etc., $50. 732-5071.

AIR CONDITIONER - G.E., 5,500 BTU, excel. cond., $95. Tom, Ext. 5277.

TAPE RECORDER - Sharp; Olivette electric typewriter; Excellsor accordian; sheet music stand. 584-7008.

SCULPTURED RUG - 12x15, Karastan, excel. cond., any reasonable offer accepted. Ext. 3652 or 744-5866 after 6 p.m.

COMPUTER - T/S 1000, never used, $40; G.E. washer/dryer, excel. working cond., $225. Henry, Ext. 4547 or 924-6688.

CHINESE FAN - palm, $10; large date palm, $30; sacrifice beautiful oil paintings, $10-30. Irene, 589-5126.

Yard Sales

RIDGE - July 9, 12-6 p.m., baby items, furniture, books, etc., 95 Lakeside Trail. 929-4268.

PORT JEFF STATION - 2-family moving sale, July 9 & 10, 26 Wilson St., 10 a.m.-5 p.m. 331-9756.

WADING RIVER - block sale, furniture, clothing, household, toys, July 9 & 10, Little Bay Road, 10 a.m.-4 p.m.

Free

LABRADOR MIX PUPPIES - need home. Kerry or Jack, 325-1472.

CALICO KITTEN - 12 wks. old, house trained. Donna, 744-3298 days or Ext. 2926 eves.

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

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

CENTER MORICHES (HOLIDAY BEACH) - fenced corner lot, water view, 75'x115, ideal location. R. Baldwin, 289-1568.

MEDFORD PINES - 4 bdrms., 2 baths, d/r, l/r, eik, den w/fireplace, inground pool, enclosed patio, 1/3 acre, assume 7%, $59,900. Jack, Ext. 4274 or 289-6708.

SAYVILLE - cedar & brick ranch, 7 rm., eik, d/r, 2 full baths, full basement, garage, central air, extras, excel. cond., can be made mother/daugher apt., $69,900. 589-2681.

BROOKHAVEN HAMLET - custom 4 bdrm., 1.25 acres, 2 car attached garage, walk to schools, 9 mi. to Lab, 1 mi. to bay, excel. cond., all oak floors, asking $125,000. Ext. 4058 or 286-0436.

WADING RIVER - colonial cape, 4 bdrm., 2 baths, d/r, eik, 2 car garage, 2,100 sq. ft., sets on 1.9 wooded acres, Shoreham-Wading River School District, asking $115,000. Ext. 4313 or 929-4551.

HOLBROOK - 2 bdrm. house, large property, garage, new roof, siding, carpeting, asking $42,500. 585-4741.

RIDGE - 1 acre fully wooded building plot, 100 ft. frontage x 400 ft. depth, quiet residential area, asking $13,900. 924-3236.

For Rent

RIDGE - 4 bdrms., fully carpeted, 2 baths, full basement, 5 mins. from Lab, $600 plus util. 924-5289.

BELLPORT VILLAGE - spacious furnished house, near bay & stores, late August to Christmas or January, rent negotiable to right tenant. 286-0379.

SHOREHAM - studio apt., basement, priv. entrance, large windows, refrig., oven, $300 includes util., avail. after July 1st. 744-6648 after 6 p.m.

MIDDLE ISLAND - furnished studio apt., priv. entrance/parking, immaculate, 4 miles from Lab, immed. occupancy, no fee, $300 includes all. 924-5076.

Car Pools

HUNTINGTON STATION/MELVILLE - 4th person needed. Meyer, Ext. 3036.

COMMACK - looking to join carpool, 8:00-4:30. Don, Ext. 2043.

SOUTHAMPTON - looking to join or start carpool. Stacey, Ext. 7732.

RONKONKOMA - driver to join 3 person carpool near Exit 59. Victor, 2395.

EAST MEADOW - reliable individual to join or form carpool. Lew Solow, Ext. 7772.

Wanted

HOUSEMATE - share large house in Coram, 4 bdrms., 3 baths, sun deck, washer/dryer, $164 per month + 1/3 util. Ext. 2521 or 928-8379.

HOUSE TO SIT - free, caring, responsible, experienced, August only. Jack Allentuck, Ext. 2412.

POPULAR ELECTRONICS - magazine, December 1980 issue. Ed, Ext. 4636.

HOUSE TO RENT - 1-2 bdrms., responsible couple, Riverhead/Calverton area. Joe, Ext. 7961 or 878-2655 eves.

CORNET - in good cond., reasonable. Russ, 325-0563.

HOUSE TO RENT - two or three bdrms., within 15 mi. radius, handyman o.k. Ext. 5212.

DRIVESHAFT - from Plymouth 340 Duster, 1972. Angela, Ext. 3552.

FILE CABINET - 2 drawer, good cond., Briggs & Stratton engine, vertical shaft, at least 8 HP. 581-7656.

LAND - 1/2 acre suitable for development in pleasant area on North Shore. Ext. 3705 or 862-7998.

WOOD LATHE - from old houses. 751-6418.

TELEPHONE ANSWERING MACHINE - reasonable. Donna, 744-3298 days or ExT. 2926 eves.

COFFEE CANS - empty 1 lb. cans for field experiment. John, Ext. 2269.

TO RENT - house or apt. for couple during month of August, 1983. Ext. 4192.

GOOD HOME - for affectionate 7 month female Labrador/Shepherd, intelligent, loving, will spay. Ext. 2959 or 941-4131.

MATURE WOMEN - to care for 3 small children, our home, own transportation. Ext. 3578 or 878-4864 eves.

GRAD STUDENT - female, non-smoker w/2 sons, seek housing, Shoreham, Wading River, Middle Island schools. 282-3130 or 924-3281.

WATER BOTTLES - or any large glass bottles. Nancy, 281-6699 after 5 p.m.

ALTO SAX - for beginner, reasonable. Pat, Ext. 2531 or 727-0547 after 6 p.m.

Ads for Services may be posted at the BERA Sales office.

BROOKHAVEN BULLETIN

Published weekly
for the employees of
BROOKHAVEN NATIONAL LABORATORY

BERNICE PETERSEN, Editor
MONA S. ROWE, Assistant Editor
ANITA COHEN, Reporter

35 BROOKHAVEN AVE., UPTON, N.Y. 11973
Telephone (516)282-2345

Classified Ad Policy

Deadline is 4:30 p.m. Friday for publication Friday of the following week.

1. The Brookhaven Bulletin's classified section may be used only by active and retired Laboratory employees.
2. All items for sale or rent must be the advertiser's property.
3. Ads for material acquired for resale in association with a full or part-time business cannot be accepted.
4. Ads for the sale or trade of firearms will not be accepted.
5. Ads not carried because of space restrictions will be held for publication in the next issue.
6. Ads are run only once and must be resubmitted if they are to be repeated. One ad per person per week.
7. **Property for sale or rent cannot be accepted on this form. Special Real Estate Ad Forms are available at the office of the Brookhaven Bulletin, Building 134.**

☐ For Sale: Autos & Auto Supplies
☐ For Sale: Boats & Marine Supplies
☐ For Sale: Miscellaneous
☐ Car Pools
☐ Wanted
☐ Free
☐ Lost & Found

Please print your ad below in 15 words or less using one word per block. Include name and phone number to call.

Note: The following must be completed for your ad to appear.

NAME (Please Print) .....

Employee's Signature ..... Life No. ..... Ext. .....

Send to: Brookhaven Bulletin, Building 134 (Ext. 2345).

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