

the Bulletin Board

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ORDERS FOR DU BRIDGE BOOK

A number of people have indicated interest in "Introduction to Space", by Dr. Lee A. DuBridge. The book, published by the Columbia University Press, contains the lectures delivered by Dr. DuBridge at BNL in September 1959 as the first George B. Pegram Lectures. Orders for the book will be taken at Personnel Services until Friday, May 20 as a convenience for BNL personnel. Call Ext. 2107 to place your order. A copy of the book is on display at Personnel Services for inspection.

SUPERVISORY SEMINARS TO BEGIN

Approximately 135 BNL supervisors will attend a new series of supervisory seminars to begin May 16. Each supervisor will attend three sessions; all of them will attend one of two meetings held on May 16. At this session Dr. G.F. Tape will outline the major scientific efforts and projects of the Laboratory and plans for the future. There will also be a discussion of the budget for the past fiscal year and the future fiscal year. Sessions II and III each will be conducted in four sections, during the periods May 17-20 and May 24-27, respectively.

CAMERA CLUB

The BNL Camera Club photo contest will be held on Thursday evening May 19 in the Recreation Hall. There will be separate competition in color slides and black and white prints. In both divisions all subject matter is acceptable. Each member may submit 3 color slides (size up to 2 1/4 x 2 1/4) and 4 black and white prints (5 x 7 to 16 x 20 in size, mounted or unmounted). Judging will be done by the vote of members present. Further details will be sent to club members.

FAIRCHILD ASTRIONICS PERSONNEL TO VISIT BNL

A group of supervisory personnel from Fairchild Astrionics Division in Wyandanch, Long Island, will visit BNL on Wednesday, May 11. About 70 people are expected to come. A general tour of the Laboratory will be followed by a dinner meeting at the Brookhaven Center.

SCANNING



Some of the techniques for studying the properties of elementary particles depend upon observing and measuring photographs of tracks made by the particles in passing through matter. The people who make the observations and measurements are called "scanners". About a dozen scanners are employed at the Laboratory, and others are at work for experimenters from the Universities using the Cosmotron.

The track-measuring techniques differ according to the way the tracks are made. In one, "nuclear emulsion" is used; this nuclear emulsion is a slab of especially sensitized photographic emulsion, about a half millimeter thick, and varying in area from several inches square to about a foot square, as conditions require. After an electrically charged particle passes through nuclear emulsion, and the emulsion is developed, the path of the particle appears as a track of more or less closely spaced black grains when viewed through a microscope. A microscope is required because of the smallness of the grain, about 1 micron (one thousandth of a millimeter) in diameter. Measurements of features of the track (the spacing of the grains, the scattering of the track, i.e., its departure from a straight line, and the length of the track) are used by the physicist to determine the charge, mass and speed of the particle making it.

When the emulsions are exposed to radiation from the Cosmotron, they are arranged in a stack, containing possibly a hundred slabs. The job of the scanner is manifold: to find the track, to follow it from one slab to another, and to measure the features mentioned in the last paragraph. All this is done with microscopes, with magnifications varying from 100 to 1000, according to the character of the track, the particular feature being measured, and the degree of accuracy desired.

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SCANNING—Cont'd

Much more in use now than the nuclear emulsion is the "bubble chamber", which is a metallic chamber filled with a liquid kept under certain suitable temperature and pressure conditions (the BNL chamber is 10 x 10 x 20 inches). What is meant by "suitable" is such a condition that when an electrically charged particle traverses the liquid, a succession of bubbles appears along its path. These bubbles expand quickly, but before they expand so much as to obliterate the fine details of the track, the tracks are photographed by cameras viewing the chamber through glass windows in its walls; the chamber is, of course, illuminated through the windows. The photographs are taken usually on 35mm or 70mm film, and the photograph of the track appears as a succession of small bubbles, more or less closely spaced, somewhat like the spacing of grains in a nuclear emulsion. However, the bubble is some 25 to 50 times larger than the emulsion grain, and the bubbles may be ten times more widely spaced, so that nowhere near as large magnifications are required to examine bubble chamber photographs; currently, magnifications between 10 and 100 are used. This makes it practicable to study the features of bubble chamber tracks by projecting the photographs, as many experimenters prefer, instead of examining them microscopically.

Usually, when a bubble chamber is exposed to radiation from the Cosmotron, it is placed between the poles of a powerful electromagnet (about 15,000 gauss). The effect of this magnet is to curve the track, and once the curvature of the track is measured, the momentum of the particle that made the track can be computed. The curvature of the track is obtained by careful measurements of positions in different views of it. The task of finding a track and performing the requisite measurements so that the track's curvature can be computed is done by the scanner viewing the film either through a microscope or enlarged on a screen.

Actually it is not just a single track in the chamber, or in the emulsion, that usually needs to be measured, but a pattern of tracks with a common point of origin. From the features of the pattern, such as the number of tracks and the angles between them, and the features of each track, the physicist can deduce what physical event caused the pattern. The event might be a decay of one particle into others, or a disintegration of an atom of the material composing the emulsion (or the liquid of the chamber), or a materialization of a photon into a positive and a negative electron.

The scanner learns the various patterns expected and becomes skillful at recognizing them. Interest and alertness are probably the most valuable qualities a scanner can bring to the work. The responsibility of the scanner is enormous, for the reliability of an investigation depends critically on the scanner's performance.

PROPERTY MANAGEMENT

Please do not prepare Purchase Requisitions for excess equipment until it has been established by telegram, telephone, or letter that the item or items are available and held for BNL. We work closely with the AEC on all matters pertaining to excess property. Replies concerning our requests to have items held are answered promptly.

LAWN PAMPHLETS AVAILABLE

Copies of "Planting and Maintaining a Lawn" by Ed Hunter of Plant Maintenance are available at Personnel Services. The pamphlet was revised in November, 1959.

GYMNASIUM

The gymnasium will be closed for evening activities during the month of May. Shower and locker rooms will be open for softball and tennis players.

BROOKHAVEN MOTOR SPORTS MEETING

A club meeting will take place May 19 at 8:00 p.m. at the Recreation Building in the Apartment Area. Arrangements are being made to show Sports Car Motion Pictures. All members please attend. Others are cordially invited to come.

BERA FISHING CONTEST

The entries have started coming in for the fishing contest. The only entries have been in the Flounder and Brown Trout classes so far. To date the heaviest entries received are: Brown trout 12 oz.; Flounder 1 lb. 4 oz.

The season is early but according to all reports the fish are really out there. Mackerel, Striped Bass, and Cod are being caught in good quantity and Blackfish and Porgies should be showing too. Let's get some entries in these other classes and also try to beat out the entries that have been received.

Any fish of the following species is eligible: Striped Bass, Sea Bass, Blackfish, Bluefish, Cod, Flounder, Fluke, Kingfish, Mackerel, Porgy, Tuna, Weakfish, Brook Trout, Brown Trout, and Large Mouth Bass.

Contact the recreation office or a member of the contest committee for any information or for copies of the contest rules and entry blanks.

BULLETIN - HAWAII TRIP!

Coupons, folder and information at Personnel Services, Building 185, and the Recreation Office. Special group rate offered to BERA in cooperation with the Long Island Industrial Recreation Association. Seventeen day trip. Departures every Friday evening during July and August. More details in next week's BULLETIN BOARD.

BNL SAFETY RECORD

**5 Days Since Last Disabling Injury
(May 4, 1960 - May 8, 1960)**



The seventh and eighth Disabling Injuries occurred on April 27, 1960 and May 3, 1960, respectively. Details of these accidents are contained in the Monthly Safety Report furnished to each Department Safety Coordinator.



BERA BOWLING

Wednesday, May 11th, all leagues will have their annual sweepstakes, and in most cases this will finish the bowling for this year (1959-1960). The over-all Championship has yet to be bowled. All the League Champions, will meet at the Patchogue Bowling Center, on Wednesday, May 18th. A round-robin bowling contest will be held, and the team with the most points at the end of the evening will become the BNL BERA Champions. The Petersen point system will be used and are awarded in the following manner: one (1) point for each game and one (1) point for each 50 pins including



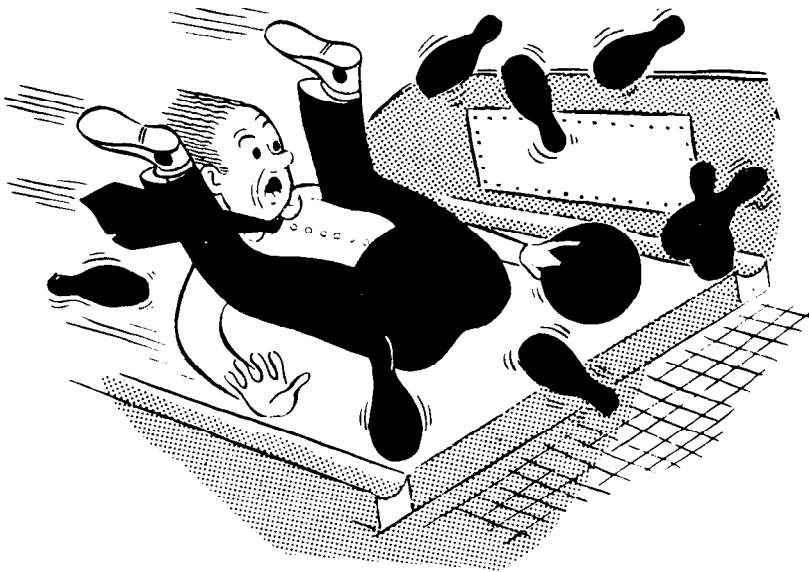
handicap. Everyone is invited to attend and cheer their League Champions on to the Championship.

The Bowling Award Presentation will take place at the Bowling Dance to be held in the Gymnasium, Saturday, May 21. The presentations will take place promptly at 8:30 p.m. and dancing will start at 9:30 p.m.

BOWLING DANCE AND TROPHY PRESENTATION

During the season, most bowlers have contributed \$2.80 to the Bowling party fund. The Dance Committee has met several times and the following is what you may expect at the party. Starting at 9:30 p.m. music for dancing by the Hi-Five combo, and they will continue until 2:30 a.m., except for a few minutes off now and then to let their instruments cool. FREE BEER, cokes, gingerale, and soda. FREE pretzels and potato chips. All persons desiring a stronger beverage than beer may bring their own bottle. A small amount of prizes will be handed out during the evening, a prize will be given for the best decorated table, a door prize, and a few surprises. Tickets will be handed out by your team captain.

BERA BOWLING LEAGUE CHAMPIONS



Last Wednesday, May 4th, was the end of the BERA Bowling Season, and this evening decided for good the Championships in the different Leagues. At the Patchogue Bowling Center and at Maggios there were several tight and interesting contests. There will be many post mortems on the league bowling, but the results are now in and final.

The results in the different leagues are as follows:

GREEN LEAGUE

Fire Department, League Champions. High Game: P. Ratyca 254; High Average: J. Lucas 171; High Series: J. Gil-martin 627.

PURPLE LEAGUE

Designers, League Champions. Phou-bars, Runner-up. High Game: R.P. Brown 256; High Average: J. Roecklein 181; High Series: J. Roecklein 648 and E. Sperry 628.

BLUE LEAGUE

Technicians, League Champions. Ir-regulars, Runners-up. High Game: L. Adamec 247; High Average: R. Larsen 181; High Series: S. Palermo 611.

RED LEAGUE

Loopers, League Champions. Bismuth Kings, Runners-up. High Game: B. Wat-son, B. Sick 236; High Average: G. Hardman 168; High Series: T. Malloy 585.

LADY KEGLERS

Odds & Ends, League Champions. Medical, Runners-up. High Game: T. Barbato 204; High Average: G. Siemen 158; High Series: G. Siemen 530 and N. Podlaski 501.

BROOKHAVEN CENTER TO FEATURE BOWLERS BUFFET

The Brookhaven Center will serve a special Bowlers Buffet Supper at the Center from 6:00 p.m. to 8:30 p.m., Saturday, May 21, 1960, preceding the Bowling League Dance and Award Presentation.

An appetizing assortment of fine foods, featuring tantalizing appetizers, one half (½) broiled spring chicken, fresh garden peas, french fried potatoes, potato salad, choice garden salad, cole slaw, assorted cold cuts, hot din-

ner rolls, strawberry short cake, melon-in-season, coffee, tea and milk will be available.

Tickets for the Bowlers Buffet Supper are on sale at the Cafeteria and at the Brookhaven Center at \$2.25 each, and must be purchased by May 20th.



PHOUBAR PARADE

NATIONAL LEAGUE

Phoubars vs. Dirty Sox

Without wasting too much time, the Phoubars led off the first inning with a six run attack primarily due to the high spirits with which each man came to the plate. Each inning thereafter they brought in at least one run. The Sox didn't bring a man across the plate till the third when two men scored due to back to back homers by Racianello and Atherton. In the fourth inning Atherton again connected for a run. This was no match for the 18 hits by the Phoubars, though. The final tally was Phoubars 18, Dirty Sox 10.

In the only other game of the week the old Old Timers slammed Metallurgy to the tune of 16-4. Their nine run lead in the first inning was something that Metallurgy couldn't even come close to the rest of the game. Pace setters for the Old Timers were Rossi with 5 hits, Adams with 4 and Johnson and Reilly with three each. For the losers, Gody and Mitchell each had three hits.

This Week's Schedule

Tues. - Old Timers vs. Plant Maintenance
Thursday - Dirty Sox vs. Metallurgy.

PUBLIC SALE

Public sale of forty-nine (49) motor vehicles. One sedan, three station wagons, balance consists of pick-up trucks, panels and carry-alls. Inspection starts May 4, 1960. Public opening of bids 10:00 a.m., May 25, 1960, Office of the Purchasing Agent. Forms for bidding are available at Police Headquarters.



The 1960 BNL Slo-Ball season opened on Tuesday, May 3rd, preceded by the traditional Phoubar parade. The procession was brief but stirring, led by a marching band composed of 16 members of the Bellport High School Band. Next came D. Cantor's 1931 Model A convertible, decorated by a bevy of pretty Phoubar supporters. At the end of the procession came the Phoubars themselves, whose marching style can best be described as individualistic.

The group proceeded from the Security Building to the playing field at Upton Road and Princeton Avenue, where Lloyd O'Laughlin, the Oldest Phoubar of All, introduced the 1960 team. The nickname of all members of the Phoubar softball team is "Killer", with the exception of George "Twinkletoes" Sabine. Then it was "Play Ball!" and the game between the Phoubars and the Dirty Sox was under way.

CLASSIFIED ADS

FOR SALE

1951 PLYMOUTH - 2 door sedan, radio and heater. J. Sutherland, Ext. 628, evenings, Ext. 528.

1957 CHEVROLET - 6 cyl. 4 dr. Std. Transmission, 2 tone, r&h. Pion, Ext. 2430.

1954 BUICK - Convertible. All power - new motor job and transmission. A beautiful car at a very low price. Ext. 423.

1954 PLYMOUTH - 4 door sedan. In excellent condition. 49,000 miles. Call Auerbach, Ext. 345 or GRover 5-5769.

1959 VOLKSWAGEN - 2 door sedan. Sun-roof, back-up lights, several accessories. Like new. 6,000 miles. Call Auerbach, Ext. 345 or GRover 5-5769.

1956 FORD - 6 cyl. 2 door. Overdrive. Extremely good condition. Ext. 2316.

1954 DODGE - radio, heater. Very clean and in good condition. \$325. Call Ext. 2135.

HOUSE - 3 bedroom ranch. Fenced back yard. 80 by 100 ft. lot. \$7,800. N. Bellport. Mike Iwantschuk, Ext. 2187.

HOUSE - Center Moriches, 10 Shirley St. Ranch-three bedroom, living room, kitchen, dining area. Oil-hot air, gas-fired hot water. ¼ acre, lovely flower beds and shrubs, brick walkways and patio, final landscaping in process of completion. \$11,500, will haggle. G. Lellouche, Ext. 345. ATLantic 4-7350 after 6 p.m.

SPEEDBOAT - 17 foot Higgins with 92 h.p. Chrysler Ace Marine engine. Needs painting and minor repairs. Sacrifice at \$550. Call Ext. 415.

OUTBOARD MOTOR - 1956. 15 h.p. Evinrude. Electric start. Excellent condition. C. Porter, Ext. 2373.

SAILBOAT - 16 foot Comet Class. Good condition. V.L. Sailor. Ext. 541.

ELECTRIC STOVE - circa 1955. 220-V., 4 burners, large oven. Good condition. \$75. Call Ext. 495.

REFRIGERATORS - 2, G.E. and Frigidaire, both 8 cu. ft. size. Like new condition. Call GRover 5-9030.

THOMPSON - 18 foot with 95 Chris Craft, Windshield, Navy Top, side curtains and back drop. Electric bilge pump, anchor, fire extinguisher, lighted compass and dash, oar, boat hook, 6 life preserver cushions, 4 life jackets, back seat, custom made cushions, 25 gal. gas tank. Trailer included. \$2250. Call GRover 5-2396 after 6 p.m.

AIR CONDITIONER - Coldspot. ¾ ton. Very good condition. About 5 years old but not used every year. \$50. Call GRover 5-4907.

WRINGER-WASHER - Speed Queen, 3 years old. Top A-1 condition. \$40.00. SAYville 4-4687-J.

HAND LAWN MOWER - 16 in. Clemson E-17 Model L. Excellent condition \$10. S. Katcoff, Ext. 621, or GRover 5-8635.

CAR POOLS

Would like to join car pool from vicinity of Blue Point. Call J. Costanzo, Ext. 548.

Would like to join or start car pool from Sayville. Call E. Zinna, Ext. 2389.