



BROOKHAVEN BULLETIN

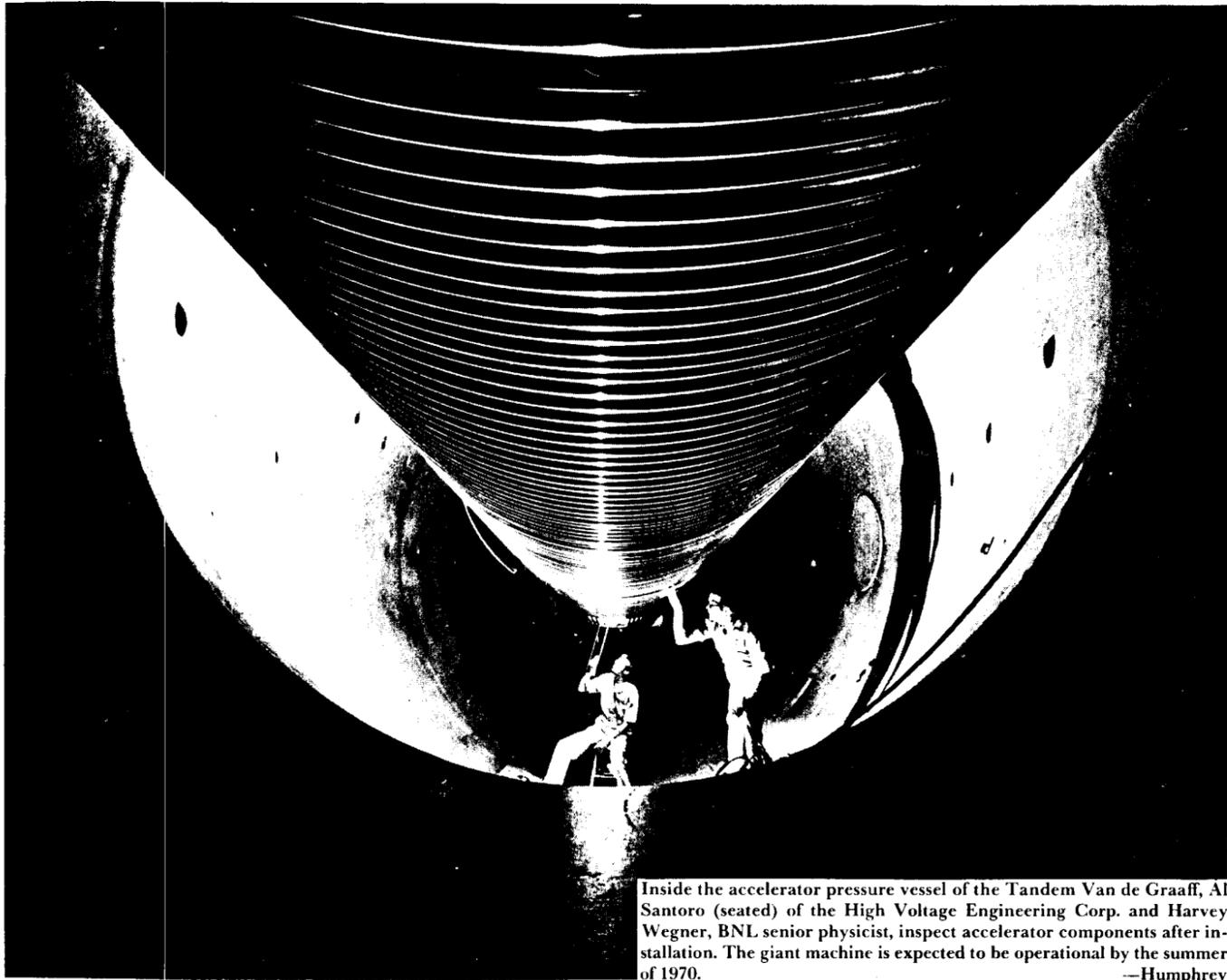
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Inside The Tandem Van de Graaff



Inside the accelerator pressure vessel of the Tandem Van de Graaff, Al Santoro (seated) of the High Voltage Engineering Corp. and Harvey Wegner, BNL senior physicist, inspect accelerator components after installation. The giant machine is expected to be operational by the summer of 1970. —Humphrey

1000 Reply To Bulletin Survey

Within three days of the distribution of the *Brookhaven Bulletin* employee communications survey, 900 replies were received from members of the Laboratory Staff. Replies are still coming in, and the total is expected to go well over 1,100 before the end of this week.

A large percentage of the replies had written comments on them, while the balance were completed with only check marks or numerical ratings for the various questions or statements.

Before attempting to analyze the results of the survey, the information contained will be transferred to punch cards so that tabulations can be made with the help of a computer.

After statistical data have been developed and comments have been digested, the results will be published in the *Brookhaven Bulletin*.

The Editor and the staff of the *Bulletin* wish to thank everyone who responded to the questionnaire and expressed their opinions on this important subject.

New A³C Chairman



George Bryant, Central Shops has been chosen to head the Affirmative Action Advisory Committee at Brookhaven. New and retiring members of the Committee attended a dinner party on Tuesday at the Brookhaven Center.

Bulletin On Holiday

The *Brookhaven Bulletin* will not be published next week because of the July Fourth holiday. Ads to be printed in the July 10 issue will be received up to noon on July 2. Regular publication of the *Bulletin* will resume with the July 10 issue.

McElroy Nominated To Replace Haworth

William David McElroy, Trustee-at-Large of Associated Universities, Inc. has been nominated by President Nixon to replace Leland Haworth as head of the National Science Foundation.

Dr. McElroy has served on several panels of the NSF, and, from 1963 to 1966 was a member of the President's Science Advisory Committee.



A biologist active in scientific research, he has since 1956 been chairman of the biology department of Johns Hopkins University.

McElroy was born in Texas in 1917, and was graduated from Stanford University, where he was active in varsity football as well as academic subjects. He received his PhD at Princeton in 1943.

Although his interests have been extended to the physical sciences while serving as Trustee of AUI, William McElroy will be the first biologist to serve as director of the NSF.



Technical Specialist Irving Feigenbaum (foreground) and Harvey Wegner, Senior Physicist, check prints of the Tandem Van de Graaff in the 400-foot-long accelerator room.

IBEW To Meet

The next General meeting of Local 2230, IBEW, will be held Thursday evening, June 26, 1969 at the Knights of Columbus Hall in Patchogue at 8 p.m. The agenda will consist of General Business plus reports of the Committees.

Lasers in Use At Brookhaven



John Hopping, Design Engineer in charge of the AGS Survey Group works with a transit laser for aligning drift tubes of the AGS. —Humphrey

Six Lasers In Use At Brookhaven Lab

About eight years ago the first laser was born. Since that time the development of the laser has progressed so rapidly that even the most optimistic researchers in the field have been amazed. Lasers are now commonly used in medical surgery, space communications, photography, mining, electronics, the security field, and in an almost limitless list of research and development sciences.

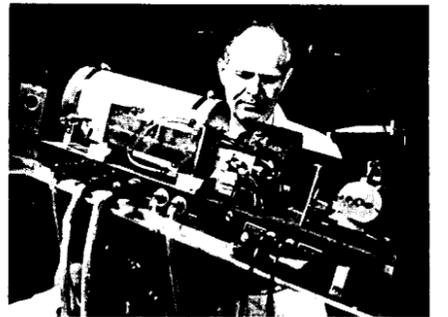
Lasers (Light Amplification by Stimulated Emission of Radiation) are devices that can concentrate visible and invisible electromagnetic radiation into extremely high intensity beams of practically uniform wavelength. The usual light beam, such as emitted from fluorescent or incandescent lighting, consists of a mixture of different wavelengths, each characteristic of a different color. In light emitted by lasers however, the wavelength of the electromagnetic radiation is practically of a uniform size so that an almost monochromatic beam results. The beam does not diverge or spread out as the usual cone shaped light beam does. It can, therefore go much further; transmit much larger amounts of energy and be focused to a considerably finer point than ordinary diffuse light. The output of even a very weak laser directed at a small spot can easily be 100,000 times as intense as the same area on the surface of the sun. The light emission may be either continuous, modulated in intensity, or proceed in pulses. These pulses may be as short a period as a few billionths of a second. The energy output can be varied from fractions of a footpound to thousands of footpounds. Peak power levels can exceed five billion watts.

Six Lasers at Brookhaven

The laser has now arrived at Brookhaven and, like many other sophisticated tools of research, brings with it new opportunities and new hazards.

Brookhaven has on site six operating lasers, whose uses vary widely. Common among them are the lower power alignment or transit lasers. Because of the precise focusing properties and high stability of continuous wave lasers, a laser beam is most useful for aligning machine components such as found at the AGS and Tandem Van de Graaff. Air pollution studies are now being conducted by the

(continued on page 2)



Robert Brown of Meteorology checks out a large pulsed laser being used in air pollution studies.

Nine BNL Senior Citizens



Alma M. Huhn



William F. Newman



William H. Bolster



Nathan T. Johnson



Walter Lambeck



William H. Cozine



Henry A. Flor



Clarence N. Bennett



Alletta Pace

Lasers

(Continued)

Meteorology Group using a relatively high power pulsed laser to gain information on atmospheric contaminants. The alignment of this larger laser is accomplished by using a smaller continuous wave laser.

Unlike some of the more glamorous "super lasers" seen in science fiction movies, those used at Brookhaven are relatively low in power. Exposure to laser radiation can cause damage to body tissue, the extent of the damage depending upon the power output and focus of the laser. Although at high energy and power densities damage may be caused to the internal organs or other deep structures of the body, the most susceptible part of the body to laser damage is the eye.

The laser produces a beam of light and the eye may focus this already intense energy on the retina on an area approaching one millionth the beam size. The result may be an almost microscopic burn or blister which can cause a blind spot. An important point to remember is that even

a portion of the reflected laser beam may be damaging to the eye.

A research report done by Brookhaven's Dr. Victor P. Bond and Len A. Baker at the Naval Training Device Center, Orlando, Florida in 1968, reviewed effects of laser radiation on the eye. Recently the Conference of U.S. Governmental Industrial Hygienists adopted guidelines for retinal exposure, which are extremely small.

The complete knowledge of the potential hazards of lasers and adequate safeguards in areas where lasers are used is essential.

Those planning the use of lasers on site should consult the BNL Safety Manual, Section GS 19 and the Safety Services Office for recommended safety procedures.

Postal Hours

The U.S. Post Office on site will be open on Thursday, July 3, from 8:15 a.m. to 3 p.m. The Office will be closed all day Friday, July 4.

Nine Senior Staffers Retire June 30

Nine BNL employees with an average of over 17 years with BNL are scheduled to retire on June 30.

Clarence N. Bennett, a patrolman with the Security Division, came to the Lab in September, 1951 after retiring from the New York City Police Department. He has served BNL for 18 years.

William Bolster, a technician in the Accelerator Department started work here in 1958. He has had 11 years with the Lab.

William H. Cozine came to the Lab in March of 1949. Most of his 20 years with BNL has been spent as a Tower Lineman with the Plant Engineering and Planning Division.

Henry A. Flor has been a Tool and Instrument Maker in the Central Shops Division. His fifteen years of service started in August 1954.

Alma M. Huhn, Executive Secretary in the Purchasing Department started at BNL in January of 1947. She has more than 22 years of service with BNL.

Nathan T. Johnson has been with Plant Engineering and Planning since November of 1956. He is retiring after thirteen years.

William F. Newman, a technician in the Accelerator Department would have reached twenty years with the Lab in November. He started for BNL in 1949.

Alletta Pace, a research services assistant in Medical, has worked at the Lab site for a total of 23 years. She was with the army in Camp Upton for two years and then worked for the cafeteria for two years before joining BNL in 1950.

Walter Lambeck, also from Plant Engineering and Planning, has been a model maker in wood for 20 years with BNL. He started here in July, 1949.

It's Still A Bargain

The May 29 issue of the Brookhaven Bulletin carried a notice that first class postal rates would go up on July 1, 1969. However, because a postal reorganization bill is before Congress at the moment, Congress has not yet approved the increase in rates. First class mail rates will, therefore, remain at 6 cents per ounce for letters and 5 cents for post cards.

Film For French Group

The next meeting of the French Group of BNL will take place at 8:30 p.m. on Monday, June 30 at the Conference Center, Berkner Hall.

The classic movie, "Le Million" by Rene Clair will be shown with English subtitles. This timely film deals with a convict's attempt at self-rehabilitation and value-conflicts in a materialistic society. The stars are Annabella and Rene LeFevre.

Everyone is welcome to join the group and see the movie. A donation of one dollar will be collected from each person attending.

T-100 To Be Relocated



T-100, the former central warehouse of the Supply and Materiel Division is in the process of being prepared to start a new career as a storage warehouse. In the coming months the building will be cut into sections and moved to the area east of the railroad siding and placed on a concrete slab. —Humphrey



The only remnant of the past glory of T-100 is the Toledo scale that was part of the building when the army was at Camp Upton. A decision on the fate of this old platform scale has not as yet been made.

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Letters To The Editor

Dear Sir:

Academic freedom includes the freedom to read. That right has been enjoyed in the Research Library by the Brookhaven staff for many years both day and night. On two occasions during the last few weeks, desk drawers have been rifled and both personal belongings and laboratory supplies have been stolen. If pilfering continues, freedom to read will end at 5 p.m. by locking the doors. Is this the way to run the library at BNL? Library Staff

Arrivals & Departures

Arrivals

Patricia A. Gilligan.....Purchasing
Jerome E. Goodine.....Ph. & Gr. Arts
Dominick J. Mauro.....Physics
Hans Postma.....Physics
John L. Schwarz.....Physics
Herbert I. Student.....Biology

Departures

James R. Cassidy.....Medical
Paul D. Hallock.....P.E.P.
Susan S. Heath.....Biology
Frederick A. Kaiser.....Physics
Paul J. Karol.....Chemistry
Edith O. Lindsey.....Physics
Pauline J. Roland.....Medical
James R. Sanford.....Accelerator

In Memoriam

Marie Caddell, Lead Key punch operator in Systems and Administrative Data Processing, died on June 22 after a long illness. Mrs. Caddell, a widow, is survived by her father and several brothers and sisters. She had been employed at the Laboratory since June, 1963.

Holiday Schedule

The Brookhaven Center will be closed on Thursday, Friday and Saturday, July 3, 4, and 5. It will reopen for dinner on Sunday, July 6.

At the Cafeteria, only the Snack Bar will be open on each of these days. Snack Bar hours are from 9 a.m. to 2 p.m.

The food vending machines in Bldg. 912 will be in operation throughout the holidays.

Cafeteria Menu

Week Ending July 3, 1969

Friday, June 27	
New England Clam Chowder	
Chopped Steak/Smothered Onions	.65
Baked Halibut Steak/Lemon Butter	.65
Combination Seafood Platter, Shrimp, Smelt, Fried Filet	.75
Cheese Omelette	.55
Fried Filet of Fish Hero	.70
Monday, June 30	
Green Split Pea Soup/CROUTONS	
Baked Swiss Steak/Country Gravy	.65
Beef, Macaroni & Tomatoes	.65
Beef Croquettes/Country Gravy	.60
Roumanian Steak on Bun	.75
Tuesday, July 1	
Chicken Noodle Soup	
Roast Chicken/Celery Dressing	.65
Pork Chow Mein/Rice & Chinese Noodles	.65
Beef & Vegetable Stew	.65
Veal Cutlet/Tomato Sauce Hero	.70
Wednesday, July 2	
English Beef Barley Soup	
Roast Top Round of Beef au jus	.65
Chicken a la King/Rice	.65
Baked Pork Link Sausage	.65
Hot Corned Beef on Rye/Cole Slaw	.75

Wednesday Special \$1.25 Plus Tax

- Cup of Soup
- Roast Top Round of Beef
- Potato and Vegetable
- Bread & Butter
- Choice of Pudding or Gelatin
- 10¢ Beverage

Thursday, July 3

Snack Bar open 9 a.m. - 2 p.m.

Happy Holiday Hitched To Safe Trailer Trip

With the arrival of the vacation season many Laboratory people are hitting the road with a trailer or boat hitched behind their car. Those who are new at this sort of thing, and perhaps even some of the veterans may find something useful in the following trailer safety hints:

Starting out: Make sure the hitch is tight and the safety chain is secure. All trailer doors should be well secured and if it's a boat, be sure it's going to stay on the trailer. Tires should be inflated properly, which usually means higher than normal pressure on the towing vehicle. Don't try to pull something with a car that has poor tires, shock absorbers or springs. Do you have a spare tire for the trailer and a suitable device for changing a wheel? (Your car jack may not fit.) Make sure all lights are working and connected properly, and that the directional light wires are not crossed. You'll want the trailer to signal the same turn as the towing vehicle.

On the Road: Remember your acceleration, maneuverability and vision will be restricted. It's going to take you a lot longer to pass or stop and you won't be able to swerve aside to avoid an accident. You're a much longer vehicle now so be sure you don't cut back too soon after passing. Sharp turns will require lower than normal speed, otherwise you could lose control, particularly if you have to apply your brakes while turning.

Special Laws: Legal requirements for towed vehicles, trailers and boats vary from state to state. Some of the more common requirements you may run into are:

1. Stop, tail and directional lights on the trailer as well as the towing vehicle.
2. Safety chains between towing vehicle and trailer.
3. Lower speed limit than regular vehicular traffic and banned from some parkways, bridges and tunnels. Restricted to right lane only in some areas.
4. If you have a large trailer you may be required to have trailer brakes that operate from the towing vehicle's brake pedal or a brake away device which automatically applies the trailer brakes if it becomes separated from the towing vehicle. If you have any further doubts or questions regarding local laws, consult the Motor Vehicle Bureau.

Softball

Tom Lee

Brookhaven League

- Blue Jays 6 - Batmen 4
- Old Timers 21 - Makeups 6
- Old Timers 13 - Dirty Sox 10

The Blue Jays finished up the first half with a win over the Batmen bringing their record to 7-1. The closest team to them, the Old Timers, won two to finish with a 5-3 record. The rest of the League followed these teams by quite a bit.

National League

- AMD 16 - S&M 10
- Bubble Boys 11 - Rat Pack 9
- Phoubars 6 - Potsareebies 5
- Metallurgy 16 - Six Pax 7

AMD answered our question - they stopped the S&M machine. But the Potsareebies, who could have tried for first, dropped a 6-5 decision to the mighty Phoubars. N. Greenlaw was outstanding for the Phoubars in the field and drove in the tie-breaking and winning runs.

Bubble Boys came back with six runs in the 6th to beat the pack. Stillmen had HR for the Bubble Boys.

Metallurgy took the Six Pax with HR's by Russo and Holmquist. J. Levine HR'ed for Six Pax.

Laboratory League

- Mets - Chemistry (No scores submitted)
- Bio-Meds 2 - Charlie Browns 4
- Deadwoods 4 - Converts 1

Deadwoods won the first half with a bit of help from the Charlie Browns. Two games out, with only one left for Deadwoods. "Say hey - Charlie Browns, a thank you from the Deadwoods".

Mets won again and could tie for second with a win over the Deadwoods in a make-up game.

Note - the Charlie Browns are out of last place.

Gymnasium Lockers

Locker registrations expire on June 30th. A memo from the Recreation Office will be sent to all present users requesting re-registration or cancellation.

If you are one of those users, and for some reason have not gotten a memo by June 25th, please call or stop in at the Recreation Office as soon as possible.

Get Wet!!

The 1969 BERA Swimming Program will start on July 7th. Registration for all classes is still open. Due to the large number of applications in the non-swimmer and beginner groups, those applications submitted after June 20th will be scheduled as follows:

Non-swimmers	Friday
Beginners	Wednesday
Adv. Beginners	Tuesday
Intermediate	Thursday
Swimmers	Friday

Parents - please note:

Children should have an early light lunch.

Girls must wear bathing caps.

Children should not bring watches, rings, chains, etc., or unnecessary money. If for some reason they do, valuables should be checked with the Lifeguards.

Lessons time is from 1:00 to 2:30 p.m.

Please do not drop children off at the pool until 12:45.

Parents of non-swimmers and beginners are encouraged to pick up their children promptly at 2:30.

Children must pay an admission fee of \$.50 each or show a season ticket.

Friday pool special events will be posted and announced as they are scheduled.

For applications and additional information contact Pat McCafferty on Extension 2808.

Theatre Group Meeting

At a general meeting held on June 16, members of the BERA Theatre Group elected officers for the 1969-1970 season. Those elected were:

President.....	Graham Campbell
Vice-President.....	Mary Kinsley
Secretary.....	Margaret Hind
Advisory Committee Chairman.....	Jackee Kelly
Program Committee Chairman.....	Pat Towey
House Committee Chairman.....	Bob Kinsey

The Group selected "Interview," a one-act play by Jean Claude Van Italie, to be directed by Julie Peierls for the Fall production, and "Period of Adjustment" by Tennessee Williams to be directed by Lu Zavesky for the Spring production. The Executive Committee is now entertaining suggestions for a second one-act play to be produced with "Interview."

Scheduled Softball Play At B.E.R.P.

The softball fields at the Brookhaven Employees' Recreation Park are to be used only for scheduled play. The fields are not to be used before 5:00 p.m. during the week.

A Reservation Schedule is maintained at the Recreation Office at 3 Center Street, Extension 2808, and reservations are now being taken for department or group activities.

Summer Film Schedule

Thursday 8:30 p.m. - Berkner Hall
Admission \$1.75

July 26	The Private Life of Henry VIII
July 10	W.C. Fields in You Can't Cheat an Honest Man
	The Endless Summer
July 17	Annapurna and Selected Short
July 24	Lord Jim
July 31	Pot-Bouille (joint showing with the French Club)
August 7	The Big Sleep
August 14	A Man for All Seasons (special showing)
August 21	Evening of Experimental Films
August 28	Sundays and Cybele

All movies will be shown at Berkner Hall on the evenings listed above, at 8:30 p.m. Admission: Employee (Family) - \$1.25; Guest - \$1.50; Child - 75¢.

Tennis Tournament Starts July 14 Register Now

The Recreation Office is now accepting registration for entry in our '69 tourney which will offer competition in the following events:

1. Mens Singles - Open to employees only
2. Mens Doubles - Open to employees only
3. Ladies Singles - Open to employees and wives of employees
4. Mixed Doubles - Open to employees and/or spouse
5. Mens Senior Singles - Open to employees over 45 years, only

Simple elimination (one loss and out) tournaments will be held in each category (provided we have enough entries). Participants will play one match each week with the dates, times, and court mutually agreed upon by the opponents.

The deadline for entries is 2:00 p.m. on July 11. A fee of 50¢ must accompany your registration - at the Recreation Office.

Our tennis committee, Dan Schaeffer, Helen Connell, Jim Brandon and Andy Kevy, will be working with Walter LaPrarie of the Recreation Office on this year's classic.

Rules and Regulations:

1. The Tournament Schedule will be posted in the Gymnasium immediately after the deadline date for entries.
2. Each round must be completed by the end of the week scheduled (Monday - Sunday). Tennis Committee reserves the right to forfeit unplayed matches.
3. Matches may be played at any time during the week by mutual agreement. Contestants are encouraged to play early in the week.
4. Matches may be played on our courts or elsewhere by mutual agreement.
5. No postponements beyond the week scheduled.
6. Second and Third round matches may be played whenever First round match has been completed.
7. Matches will consist of best 2 out of 3 (sets), including finals, and must be completed when started unless other arrangements have been made prior to start of match by mutual consent of the contestants.
8. Winners of matches are requested to report scores to the Recreation Office as soon as possible.
9. Awards will be awarded by BERA. The number of awards, per tournament, will be decided by the number of participants.
10. Each contestant must furnish container of new balls (championship grade) for match. Winner receives unused container of balls. Balls may be purchased at the Recreation Office weekdays from 9:00 a.m. to 1:00 p.m.
11. The finals in each event will be scheduled by the Recreation Office.

Ladies' Volleyball Bounces Out

Due to lack of participation, the regular Monday night volleyball games have been dropped.

Look for spot announcements of special games scheduled if and when the ball starts bouncing again.

Play Session Registration Still Open

The Recreation Department still has plenty of room in its morning play session for all those on-site families interested in registering their youngsters. The program provides experienced supervision and instruction Monday thru Friday from 9:00 a.m. to 11:30 a.m. The program begins on July 7th and continues thru August 22nd.

All children must be at least five years of age and pay a registration fee of \$7.50 per child in order to participate. Registration forms for the program may be picked up at the Recreation Office. Tee shirts will be given to each child who enrolls and teenagers are encouraged to participate. There are special events scheduled both in the mornings and evenings in order to provide a chance for parents to join in the fun.

Registration forms and fees should be sent to the Recreation Office.

Movie Plans . . .

For Fall-Winter-Spring Season Your Support Needed Now!

The BERA Movie Committee has decided for the coming season, which is scheduled to begin in September, to present a Subscription Series to which admission will be limited to subscription ticket holders only. No single admission tickets will be sold at the door.

The plans are to show at least 15 movies from September to May. They will be of all types (e.g., auto racing - two weeks before the races at Watkins Glen) by experimental film makers from film libraries of various New York museums, plus other obtainable films which you as a subscriber would be interested in. In essence, it will be your program - developed for, and by, your interest.

Before the Committee confirms its plans, it wants you to express your support by buying a \$10 subscription now. For this fee, the employee and one guest may attend all the season's scheduled films. That's 30 admissions - and the cost is less than 35¢ per admission.

Our Goal

The program must have a minimum of 35 subscribers by August 29 and will be instituted only if that goal is achieved. On the brighter side - if we sign up more than our minimum, additional films will be added to the program.

For your ticket, stop at the Recreation Office, 3 Center Street, or call our Film Chairlady Victoria Levis, Extension 2341, or buy one from our ticket taker at Berkner Hall when you are attending our Summer Thursday night shows.

We need you - Please call Vicki if you would like to join the working Committee.

Movie Tonight

Thursday, June 26 - 8:30 p.m. - Berkner Hall

The Private Life of Henry VIII

The terrific actor and make-up artist, Charles Laughton plays the King of England in a very funny romp through the superficial history of the marital habits of an English king.

Henry, third child and second son of Henry VII, was King of England from 1509 until his death in 1547. The first English monarch to be educated under full influence of the Renaissance, he was a scholar, linguist, musician, and athlete. He left business affairs to his assistants and concentrated more on politics and the military building up of the English navy (so that in the future it would be strong enough to defeat Spain, free the Netherlands, and colonize North America). He participated in various alliances with and against Francis I of France, Charles V of Spain, and whoever took his fancy at whatever time.

His alliances, like his marriages, were based on only one thing: the good of the English state.

Henry's sense of efficiency and national unity were behind everything he did. His enormous amount of self-restraint (for he was quite an egotist and a fame-hungry man) kept him from allowing his insatiable desire for power to push his people beyond a tolerable level in religious reform and national unification. He annexed Ireland in 1542 with absolutely no trouble at all.

Henry divorced Catherine of Aragon because she could not produce a male heir. He married Anne Boleyn, whom he ordered beheaded because she was an adulteress and could not produce a male heir. In 1537, Henry married Jane Seymour. Jane was a nice, sweet young thing, obnoxious to no one. She died after bearing Edward VI. Henry was once again married to Anne of Cleves. This marriage ended in divorce because he found her personally distasteful and politically unnecessary. He married Catherine Howard to please the Catholic minority and had her beheaded in 1542. His last wife was Catherine Parr, a patroness of scholarship.

Henry VIII was a benevolent dictator-monarch. He was a despotic ruler of a nation making the transition from medieval feudalism and separatism to modern limited monarchy and unification.

