

BROOKHAVEN BULLETIN

Volume 30 - Number 27

July 16, 1976

New Managers

James L. Desmond has been appointed Business Manager of the Laboratory. In this capacity he will have direct responsibility for the operation of the Purchasing and Supply & Materiel Divisions. He will continue to coordinate Grants and Contracts, as well as the Work for Others program, which involves tasks not associated with ERDA or NRC activities.

Since August 1, 1969, Desmond has been Executive Assistant to V.R. O'Leary, Associate Director for Administration. He joined the Laboratory in 1963 after working as a Cost Administrator for RCA in Camden, New Jersey. In 1967, he was appointed Senior Budget Analyst.

Desmond obtained his B.S. degree in economics from Mt. St. Mary's College and did graduate work in industrial management at the Polytechnic Institute of Brooklyn.

He lives with his wife and seven children in Miller Place.

— photo by Rosen



James L. Desmond

James P. Birtle, who has been associated with all aspects of administrative data processing activities at the Laboratory for over thirteen years, has been appointed Manager of the Administrative Systems and Data Processing Division.

Birtle joined the Laboratory in 1962 as a Systems Analyst, becoming Assistant ADP Operations Supervisor in 1967 and Operations Supervisor in 1973. Prior to his Brookhaven appointment, he spent two years as a Systems Analyst at the Univac Division of Remington Rand in New York City.

He obtained a B.S. degree in Business from the University of Dayton.

Birtle lives with his wife and son in Port Jefferson.

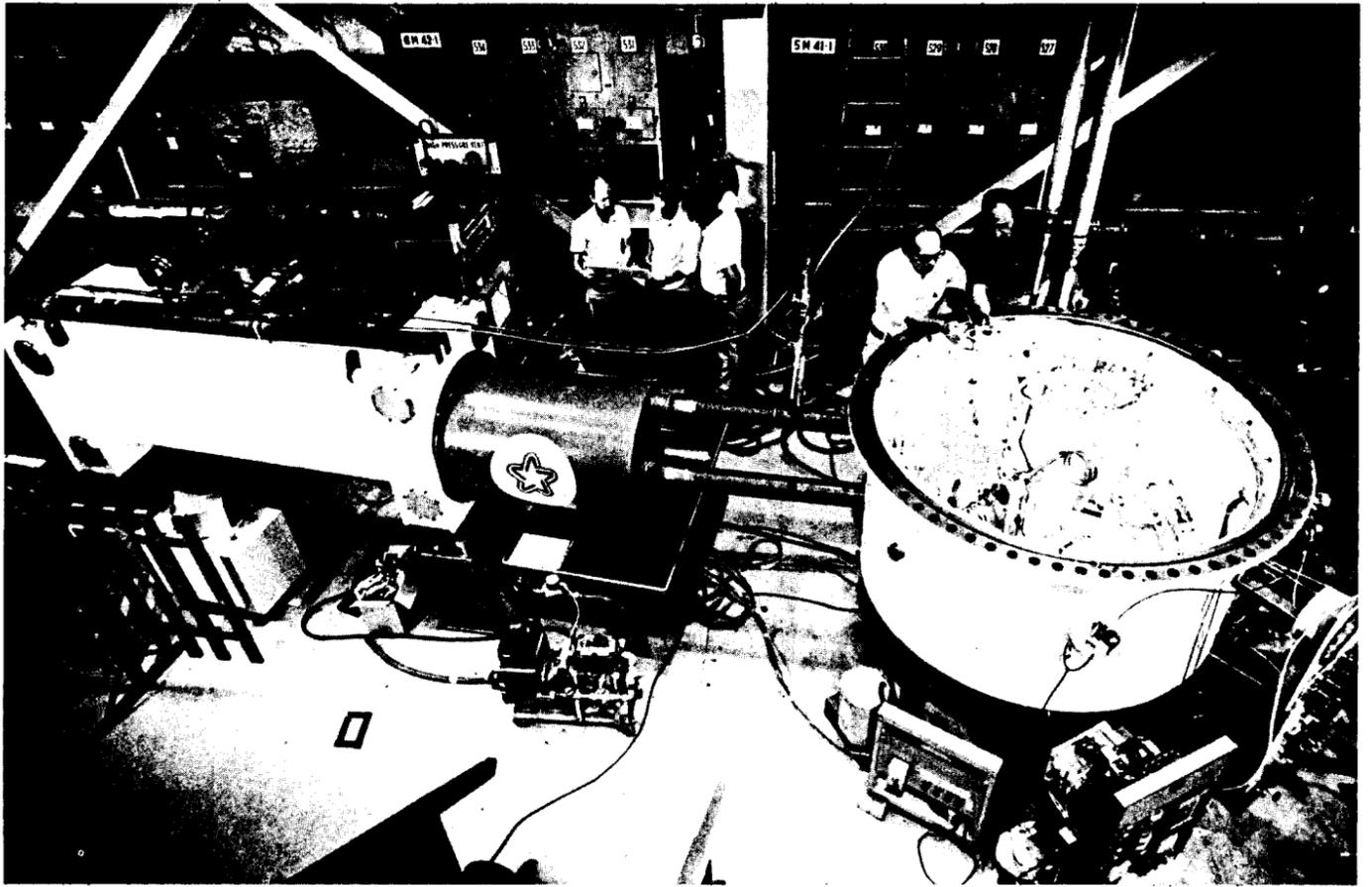


James P. Birtle

Pool Closed Saturday

Due to scheduled repair work on a watermain break, the pool will be closed on Saturday, July 17.

Normal schedule will resume on Sunday, July 18.



Don Brown and Joe Bamberger (at right) prepare for installation of a second ejector nozzle which will be used during the next magnet run. In the background, Ken Robins, Al McInturff and Bill Sampson confer near the control console of the 4.25 meter magnet.

ISABELLE Ice Box A Hit

A full-scale dipole magnet has operated successfully with the novel refrigeration scheme developed for ISABELLE's superconducting magnet system. The performance of the 4.25 meter ISABELLE dipole, similar in design to the actual ISABELLE ring magnets, exceeded the expectations of the entire ISABELLE team. The supercritical high pressure helium coolant gas used resulted in improved performance and stability of the superconducting magnet and simplified operation compared to the liquid helium "pool boiling" technique used for the earlier magnet tests. This new development for ISABELLE was achieved by the combined efforts and talents of physicists, engineers, designers, technicians, BNL shops and support groups, who shared their know-how and resources.

Many unique features were incorporated

in the design of this magnet: The superconducting coil was fabricated at BNL using a conductor braided from Niobium-Titanium wire on machines modified at the Laboratory for this purpose from their original use in the textile industry; a unique assembly technique is used to "shrink" the magnet coil into the massive iron core with its heavy stainless steel outer vessel to assure rigidity and conformance to the extremely close dimensional precision required. This construction, together with the forced flow cooling system, eliminates the need for a helium dewar, reducing costs and increasing reliability of the magnet system. The high pressure helium coolant gas is cooled below 4° K and is then circulated through passages provided in the magnet coil.

The 4.25 m "MARK II" was repeatedly

energized during the test to study magnet characteristics, such as stability and magnetic field homogeneity and to gain operating experience with the method of refrigeration. During these tests a peak current of 4030 amperes, corresponding to a magnetic field strength of 4.75 tesla was attained.

The performance of this magnet, which exceeds the requirements for the ISABELLE ring magnets, greatly increases the confidence of the ISABELLE group in the soundness of the design and in the cost estimates for the project. More work on these magnets is now underway to further enhance their performance. An increase in the refrigeration system's efficiency is expected with an improved insulation system and with use of centrifugal expanders in place of the ejector system to achieve lower temperatures.

In Recognition

Nikola Tesla, the inventive genius whose concepts revolutionized the electrical power industry and whose once famous name is now largely forgotten, was remembered in simultaneous ceremonies held July 7, at Brookhaven and in Yugoslavia, the country of his birth. Tesla emigrated to the United States in 1884 and later became a U.S. citizen. In recognition of Tesla's contribution to America, President Ford sent a delegation to Yugoslavia to participate in that country's tribute to him.

About 150 people attended the symposium at Brookhaven, co-chaired by Vasa Veskovc, Consul General of Yugoslavia in New York City, and R.C. Anderson, Laboratory Assistant Director. Percy Sutton, President of the Borough of Manhattan, City of New York, who was unable to attend the ceremonies, hailed Tesla's work in a telegram to the Laboratory:

"I deeply regret that I am unable to join you today as you honor the great immigrant inventor/creator Nikola Tesla, born in Yugoslavia, but benefiting America so greatly with his creativity. He is ours as well as Yugoslavia's. Your honoring of him today at Brookhaven in this Bicentennial year is to be applauded and praised. Nikola Tesla's prolific and masterful achievements ought to be saluted by all."

In his opening remarks Anderson noted that a recognition dear to the hearts of all scientists had now been given Tesla. In the new international system of standard units, the unit of magnetic force has been named the tesla.

Frank A. Jenkins, President of the IEEE Power Engineering Society, said that Tesla



The memorial plaque donated by Yugoslavia, was dedicated at ceremonies in front of the Peerless plant in Shoreham, site of a former Tesla laboratory. From left, R.C. Anderson, Brookhaven Assistant Director; Robert Reid, former Brookhaven Town Councilman who urged the Town to designate the Peerless plant as an historic site some years ago; Thomas J. Burke, Project Manager of LILCO's Shoreham plant; and Vasa Veskovc, Consul General of Yugoslavia in New York City.

—photo by Rosen

worked by what he called "instinct" and preferred to be considered a "discoverer of new principles, rather than an inventor." He was the first to conceive an effective method of utilizing the alternating current and in 1888 was granted patents on the induction motor and on polyphase systems. He invented the principle of the rotary magnetic field embodied in the apparatus used in the transmission of power from Niagara Falls.

Jenkins said Tesla attributed much to his

mother who apparently invented labor saving devices in the home for her family and possessed a phenomenal memory, gifts he inherited. Tesla started his career in the United States working for a time with Edison and later with Westinghouse. His inventions were many: new forms of dynamos, transformers, induction coils, condensers, arc and incandescent lamps and other electrical apparatus. Although his patents were purchased for a million

(Continued on page 2)



Eric B. Forsyth, Head of Brookhaven's Power Transmission Project, discussed the project at the symposium. Tesla's work on power transmission was a forerunner to that now carried on at Brookhaven.

Tesla (Continued)
dollars, Tesla died penniless in New York City in 1943.

In recognition of his many achievements, Jenkins announced that the IEEE has established a Nikola Tesla Award.

Other speakers, introduced by Veljko Radeka, Yugoslav-born Head of the Laboratory's Instrumentation Division, were Walter H. Bales, Westinghouse Electric Corporation, Gordon D. Friedlander, Senior Editor, IEEE *Spectrum*, and Eric B. Forsyth, Head of the Power Transmission Project at Brookhaven.

In 1901 Tesla came to Long Island and built a laboratory at Shoreham. A plaque in his memory, given by Yugoslavia to the United States as a Bicentennial gesture, was dedicated at the climax of the ceremonies, at the site of his laboratory on Route 25A, which now houses the Peerless Photo Products, Inc. The 200-foot experimental tower which Tesla built was dynamited during World War I when it was felt by some to be a menace to national security, and all that remains is the concrete base.

Rasmussen Reports On Reactor Safety

The most dangerous part of a nuclear reactor is the electrical power it produces, according to MIT Professor Norman C. Rasmussen, who gave a reactor safety seminar at BNL on July 7. Although the public has never been endangered by the release of radioactive material, he cited over 1000 yearly fatalities from accidental electrocution.

Rasmussen began his study of reactor safety for the AEC in 1972, culminating in a report titled "Reactor Safety Study: An Assessment of Accident Risks in U.S. Commercial Nuclear Power Plants," which was completed under the NRC three years later. The 60-person staff contributed 70 man-years of effort to finish the study at a cost of \$4 million.

In comparison to non-nuclear accidents, the Rasmussen report statistically estimated the likelihood of reactor accidents with similar consequences and found them to be much smaller. The report concluded: "The risks to the public from potential accidents in nuclear power plants are comparatively small."

"We were primarily concerned with identifying accident sequences which result in the release of radioactive material to the public," said Rasmussen. He explained that the research group was able to focus on accidents which would result in melting of the core. The core of a commercial nuclear reactor is composed of radioactive fuel that undergoes fission to produce heat, which is later converted to electrical energy.

The research team "mapped-out" melted core accidents on a diagram showing all the accidental events necessary for the final result of radioactive material release. This "event tree," which is one of several statistical techniques developed by NASA and the Department of Defense over the last decade, allowed them to identify the major events necessary in the accident sequences.

Using "fault trees" the team was able to map the malfunctions required for one of the single accidental events to occur. By statistically finding the probability of these malfunctions, scientists were able to calculate the chance that they would happen in a sequence which would result in the occurrence of the accidental event. From here it was possible to estimate the probability that the events would occur in a sequence resulting in melting the core.

On the chance that a radioactive fission product could be released into the atmosphere, they studied meteorological conditions to estimate the possible damage to property and public health. Rasmussen explained that the overall risk assessment was made in comparison with typical risks that the public faces.

The study found that over 100,000 people die every year due to man-made and natural accidents in the United States. The list of 16 types of accidents includes everything from tornadoes to electrocution, but none of them are attributable to nuclear reactors. Rasmussen further pointed out that an American has a six in ten-thousand chance of being killed in a non-nuclear accident each year, but has a chance of only two in ten-billion to be killed in a nuclear reactor accident.

Rasmussen's critics charge that the massive results of just one nuclear reactor

accident warrant their alarm, but he contends that, "Only one per cent of the core-melt accidents have more than ten fatalities. It's always the worst nuclear accident compared with the average plane crash."

He explained that large accidents with many fatalities are much less likely than small ones. For non-nuclear and nuclear accidents with results of the same magnitude, Rasmussen found that the chances of occurrence are smaller at the nuclear power plant. "The worst accident is limited by how many unrelated events that have to be linked together in a sequence," Rasmussen explained.

The Rasmussen report assesses public risks with nuclear power for 100 reactors based on the 58 we have now. He warns that the report will be obsolete soon because of the new reactors being built. "The report is good for only five or ten years," said Rasmussen. "New plants tend to reduce the risks (through better safeguards), but how much, I don't know."

The study also considered evacuation plans as an added safeguard for 15 million people living in the 25-mile radius of a nuclear power plant. Evacuation was not considered for those living outside of the 25-mile radius because of the very low risk factor. "I think it can be shown that outside the 25-mile radius more people would be injured in an evacuation attempt," he said.

Rasmussen pointed out that the United States spends \$1 billion per year on nuclear safety, where there have been no fatalities and the chances for them are low. In contrast, there are over 100,000 per year dying in non-nuclear accidents and an estimated 250,000 dying from environmentally-induced cancer. —Clifford Cockerham

July Service Awards

The following employees will receive service awards during the month of July.

Twenty-Five Years

David R. Christman Chemistry
Thomas A. Mullany, Jr. Mech. Engrg.
Harry R. Munkelwitz Applied Science
Edwin F. Rappe Physics

Twenty Years

Clemens Auerbach Applied Science
Joseph C. Balsamo, Jr. Accelerator
Herman P. DeCastro Plant Engrg.
Robert E. Mignerey Mech. Engrg.
Alice M. Perez Technical Information
George W. Scott Plant Engrg.

Ten Years

Leroy N. Blumberg Accelerator
Michael W. Lalosh Safety & Envir. Prot.
Vincent LoDestro Accelerator
Vito Manzella Physics
Michael F. McAllister Safety & Envir. Prot.
Arthur J. Miley Staff Services
Gerald J. Novak Accelerator

I.B.E.W. Meeting

Local 2230, I.B.E.W. will hold its regular monthly meeting on July 21, 1976, at 8 p.m. in the Knights of Columbus Hall, Railroad Ave., Patchogue. There will also be an afternoon meeting at 2 p.m. for shift workers in the Union Office at 31 Oak Street, Patchogue. On the agenda will be regular business, committee reports, the President's report and report of the Negotiating Committee.

Hail To The Blood Drive Donors!



740 Pints Deposited In Lab Blood Bank

"We took 740 pints of blood on June 30 and July 1," was the gleeful announcement from Sharon Hoeffner, Director's Office, who helps run the BNL blood drive for the Greater New York Blood Program.

Since the Lab reached its quota of 700 pints, all on-site employees will be covered by the Program for an unlimited supply of blood when needed. In addition to the spouse and dependent children, coverage will be extended to parents and grandparents on both sides of the family.

The Director's Office wrote a memo shortly before the drive warning that the Lab might not reach its quota this year. Donating to the blood bank had always seemed worthwhile to me, but the memo convinced me to give it a shot this time. Back at Cornell, where I go to school during the year, I never miss a home football game and this memo aroused that same team spirit.

While I waited in line nibbling jelly beans on the day of the blood drive, I tried to find out what brought other donors to the gym that day. Some were neophytes like myself, who simply never had the time to give blood before. The seasoned donors really knew what they were doing though, saving lives.

"I try to give blood three times a year now," said Nate Carter, Safety and Environmental Protection. "I used to give only once a year, but then they would call me back because I have rare A-negative blood."

Gail Wait, Applied Science, explained, "I think if you're healthy - lucky enough to be healthy - you should give."

After leaving my deposit with the bank, I was escorted to some tables at the far end of the gym where food and beverages were being served by the BNL Hospitality Committee. I sat there munching on cookies and

wondering if I was the only donor to get scared giving blood.

"Oh yeah, I've done it many times and I still get scared each time," assured Ron Weider, AGS. "The sheet you sign says they can take approximately a pint - and that means however much they want," he jokingly added.

Eric Crump, Applied Math, does not let his fear of needles get in the way. "You better believe I was scared. Every time I give blood I'm scared, but I still give," he said. "Can you figure that one out? It wasn't so bad this time," Crump added, "because I had a nice chick next to me."

Charles Bohnenblusch, AGS, was practical. "I have given blood about twenty times," he said, "basically so the family can have blood if they need it. We belong to the blood bank, so if we have an emergency they are supposed to give us blood without any charge."

To receive blood under this coverage, patients must inform the hospital that they are covered under the Greater New York Blood Program through Brookhaven National Laboratory account #GO-2221. The hospital will contact BNL to verify coverage and authorize an unlimited supply of blood to the patient.

For employees who missed the annual blood drive or would like to donate more than once a year, the Greater New York Blood Program has arranged for local donor stations to operate all year in hospitals throughout Suffolk County. To donate to the BNL blood bank, employees only need to give the BNL account #GO-2221. Participating hospitals include: Brookhaven Memorial, Eastern Long Island, Huntington, John T. Mather Memorial, St. John's, Southampton and Southside. Contact the Personnel Office for further information. —Clifford Cockerham

Brass Trio To Perform

The next program of a series of summer concerts sponsored by the BERA Concert Group will be presented next Tuesday evening, July 20, at 8:30 p.m. when the Long Island Brass Trio appears in Berkner Hall. This group of young musicians came to the attention of the Concert Committee through



very favorable recommendations by a number of Brookhaven employees who have heard them in other performances.

It will surprise some to learn that there is a wealth of music available for brass trio,

and this group's repertoire includes music from the early baroque to contemporary. The Trio is made up of David Naylor, trumpet; Joyce Kilmer, French horn; and David Schecher, trombone.

The Trio presents an informal program during which enjoyment of the music is given first priority. The musicians discuss the music with the audience. Since much of the music is relatively unknown, their program is thus both educational and entertaining.

Admission to this program will be \$3.00 for adults and \$1.50 for students and persons over 65.

Tune In!

#413

Does the Bankers Trust Bank on site have any plans in the near future to offer free checking?

Answer:

Due to a recent reorganization of Bankers Trust, we expect that by September, 1976 there will be a wider range of banking services available to Brookhaven National Laboratory employees. We're not sure if this will include a free checking service. It may be a form of free checking, as long as a minimum balance is maintained (sometimes several hundred dollars).

As soon as more definite information becomes available, we will have an article in the *Brookhaven Bulletin*. —B. J. McAlary

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Letters To The Editor

To the Editor:

I would like to thank everyone for sending in the thousands of Campbell soup labels, from the nearby areas and from as far away as Ft. Lauderdale, Florida. The children of St. Johns School would also like to thank everyone for helping them. A slide projector and screen have been obtained and we are now in the process of getting gym equipment.

— Frank Chandler

To the Editor:

My sincere thanks to all for your thoughtful kindness and sympathy at a time when it was deeply appreciated.

Sincerely,
Lois Norman

To the Editor:

Herman "Herb" Otterstedt, a former member of the Accelerator Department, died on July 4, 1976, after a long illness. Since his retirement on July 5, 1963, Herb and his wife Flo lived in Floyd, Virginia.

— Frank Thornhill

To the Editor:

As many of you know, I left the Laboratory on June 30 and was unable to say good-bye to many with whom I was associated for several years. To those friends, I would like to express my appreciation for the opportunity of working with them.

— George Sabine

Dear Mr. Vineyard:

I would like to take this opportunity, on behalf of the Long Island Industrial Recreation Association, to very sincerely thank you and your staff at Brookhaven, for first of all your kind invitation for our people to meet at the Lab and secondly, the really tremendous program that was staged by your people.

Without a doubt, this was the outstanding program of the year and every one of our members was most thrilled and excited with all that they saw and heard. Brookhaven Employees Recreation Association, under the leadership of Ken Batchelor, went out of their way to make this a most memorable event. Your associate director, Dr. Victor Bond, was most gracious in his welcome to us and your personnel staff, Mr. Paige and ably assisted by Miss Blanche Laskee did an outstanding job in making everyone feel welcome.

We are most grateful and we are only sorry you could not be with us that day so that we could have expressed our thanks personally. I would certainly say that the Laboratories have some wonderful public representatives in these people in your "Quest" to tell the Brookhaven story.

I trust you will pass on our comment to all your wonderful people and again I say thank you to all your staff.

Sincerely yours,
Oskar Frowein
President

Cafeteria Menu

Week Ending July 23, 1976

Monday, July 19	
Cream of Mushroom Soup	
Chicken a la King on Rice	1.10
Cheese Omelet & 1 veg.	1.00
Tuesday, July 20	
French Onion Soup	
Chinese Pepper Steak on Rice	1.25
Roast Fresh Ham & 1 veg.	1.30
Wednesday, July 21	
Split Pea Soup	
Breaded Flounder Filet & fr. fr.	1.15
Special	
Spaghetti w/Meat Sauce & Garlic Bread	
All You Can Eat	\$1.10 plus tax
Thursday, July 22	
Cream of Chicken Soup	
Beef Hash & 1 veg.	1.15
Veal Pattie Parmigiana & 1 veg.	1.20
Friday, July 23	
Manhattan Clam Chowder	
Broiled Filet & 1 veg.	1.15
Meat Loaf & 1 veg.	1.15

Third Preface Program Begins



Pre-engineering students arrived on site July 7 to work here for six weeks under the Preface Program which is jointly sponsored by ERDA and Howard University. The students will enter Howard University in the fall to begin studies in chemical and electrical engineering. They have been assigned to the AGS, Plant Engineering, DAS, and Safety and Environmental Protection where they will become acquainted with the many aspects of their chosen profession. Standing from left, William Ryan, Bryan Goodwin, James Murphy, Michael Boddie. In foreground from left, Anthony Johnson, Andrea Hargrove.

Arrivals & Departures

Arrivals

Marshall W. Brown, Jr.	Accelerator
James F. Hainfeld	Biology
Robert E. Hall	Applied Science
Louise Hicks	Applied Math.
Robert W. Judd	Ph. & Gr. Arts
Frank B. Kainz	Applied Science
Jonathan Kelley	Medical
Shirish S. Mulherkar	Applied Science
Manoo B. Ruder	Medical
David J. Schlyer	Chemistry
Gunnar I. Senum	Applied Science
Daniel Van Rooyen	Applied Science
Howard L. Weisberg	Accelerator

Departures

Diana C. Bartelt	Biology
Emily L. Dobyns	Medical
Willie T. Drinks	Personnel
Vincent Gazerro	Applied Science
Kari W. Johannesen	Medical
Joseph S. Mauro, Jr.	Plant Engrg.
Maureen H. Sacker	Medical
Edith E. Thornhill	Director's Office

Whistler Show Next Week

The BERA Art Committee presents 37 etchings and lithographs by James A. McNeill Whistler, an exhibition obtained through the Gallery Association of New York State, Inc. The collection will be on view July 20 to August 2, from 11 a.m. to 1:30 p.m. on weekdays, in the B Room of Berkner Hall.

Whistler's long career as a graphic artist is telescoped in the exhibition, which includes major highlights as well as lesser known works dating from the late 1850's to the mid 1890's. This long time span and the scope of the subject matter, ranging from portraits and figure studies to harbor and street scenes in London, Venice, Paris and Amsterdam, afford a special glimpse into Whistler's life-long preoccupation with the everyday world around him. A brilliant versatility and technical facility coupled with a masterful sense of composition lend a grandeur to these prints that contrasts with the small sizes of the images and the frailty of material.

Court Reservations

The newly instituted tennis court reservation system is presently being over-subscribed by early risers. To provide more equal access, the Tennis Committee has decided that reservations will be accepted at the BERA Office in Berkner Hall only during the hours 11:45 a.m. to 2:30 p.m. The new sign-up hours will become effective on July 19.

Tennis Clinic

As in past years, the Tennis Committee is planning to offer a summer tennis clinic for beginning and beginning-intermediate players. The clinic will meet at the Laboratory courts on Saturday mornings from 9:00 a.m. to 10:30 a.m. for four consecutive sessions starting July 24 - July 31 in case of rain.

Registration is limited to persons over 16 who are either Laboratory employees (including summer visitors and guests) or immediate family members. Interested persons should sign up at the BERA Office in Berkner Hall during the week of July 19. Enrollment, with \$5.00 fee, will be limited to 24 persons, on a first-come, first-served basis.

Registrants should arrive at the courts shortly before 9:00 a.m. Sneakers must be worn and racquets and tennis balls provided by players. Other tennis players should note that the courts will not be available for regular play during the clinic sessions.

Basketball Clinic

The Recreation Office is offering a basketball clinic for all children 8 years old and older to be held at the Gym every Tuesday and Thursday from 3 to 4 p.m. Expert instruction will be given by Mr. Carl Verdi, a high school basketball coach, and Mr. Bob Skeeter, a Suffolk County All Star.

There is no charge for this clinic. Children may sign up at the Pool or the Summer Recreation Office in the Gym any weekday. Call Ext. 3147 for further information.

Soccer

John Skalyo

The BNL team got off to a poor start in the Brookhaven Town Summer League losing 2-0 to Bellport and 3-0 to Patchogue S.C. in the first week of play. The game of July 12 against William Floyd found a few of the team members nursing slight injuries; the result was BNL played with only 10 men and still managed a 1-1 tie.

William Floyd won the toss of the coin and took the wind; they were able to apply considerable pressure and scored early. William Floyd generated most of the games scoring opportunities with their man advantage but were stopped repeatedly by great goal tending by Feiler. The wind advantage in the second half evened the play for BNL, and in the last 5 minutes Batchelor found the range from the right side of the area placing the ball into the upper left corner of the net.

Games coming up are against Miller Place S.C. at Miller Place High School on Monday, July 19, and against Eastport at Bellport Jr. High School on Wednesday, July 21.

Adult Swimming Lessons

Popular demand has prompted the Summer Recreation Staff to again offer adult swimming lessons.

The sessions will be held each Tuesday and Thursday from 5:15 to 6:15 p.m. starting on July 20 and continuing to August 19.

The cost is \$10 for the entire course of instruction. Applicants may sign up at the Pool or at the Summer Recreation Office in the Gym from 11 a.m. to 3 p.m.

The course is limited to 20 people, so sign up early! Refer all inquiries to Ext. 3147.

Softball

Ed Taylor

League I

Ravens 13 (4-2) - Old Timers 2 (3-3)

Leroy James and Bob Brown led a well-balanced hitting attack as the Ravens derailed the Old Timers. Spider Ligon pitched a masterpiece for his club as he kept the enemy hitters off balance all evening.

Blue Jays 6 (2-4) - Hawks 4 (3-3)

No highlights available.

League II

Six Pax 5 (6-1) - Metallurgy 3 (2-5)

This game featured good defense and timely hitting by the Six Pax.

Bubble Boys 11 (3-4) - Dirty Sox 7 (3-4)

The Bubble Boys displayed good team hitting and all around good playing to win. Vinny Shiampou had a homerun for the Bubble Boys.

League III

Phoubars 16 (3-4) - Medical 4 (2-5)

Bob Brown, Ken Kowalski and Jack Brennan had 3 hits apiece for the Phoubars. Don Brown played some good second base for the winners also.

Circuits 17 (7-0) - Sweathogs 13 (2-5)

Jerry Levine (3 for 5), Jeff Gaffney (3 for 4) and John Schmidt (4 for 5 with a triple) led the Circuits. Mike Zepmeisel had a big "K" for the Circuits.

League IV

Streakers 12 (4-1) - Power Packers 9 (4-2)

This was a well played game by both teams with the Power Packers prevailing.

Charlie Browns 24 (3-3)

Nuke Powers 12 (0-5)

John Spraggins (5 hits, with 2 homeruns and 6 R.B.I.'s), Al Nathan (grand slam and 5 R.B.I.'s), John Bennett (4 hits) and Mel Bonnano (1 homerun) led the winners. The "Catfish" had an unassisted doubleplay for the Nuke Powers.

League V

Oh Kays 16 (7-0) - Balls & Strikes 5 (5-2)

The Oh Kays led by Debbie Antonio, Sydell Lamb, Rosemary Mack and Kay Hunt defeated a good Balls & Strikes club. Howie Antonio had a big "K" for the Oh Kays.

Turkeys 25 (3-4) - Odd 15 2 (1-6)

No highlights available.

Diamonds 13 (5-2) - T.N.T. 4 (0-7)

No highlights available.

Upon publication of the updated BNL telephone directory, the telephone listing for all emergencies will be 2222.

Classified Advertisements

Placement Notices

Each week the Personnel Office lists personnel placement requisitions, currently being processed. The purpose of these listings is, first, to give notice of all non-scientific staff positions being filled and, second, to give employees an opportunity to request consideration for themselves through the Personnel Office. In filling vacancies, the Laboratory's objective is to give first consideration to present employees, as follows: employees within the immediate group having the vacancy, employees within the department or division, employees within the Laboratory as a whole.

For further information regarding a placement notice, or to request consideration for an available position, contact Supervisor, Personnel Placement & Development, extension 2874 or 2882.

146. STOCK CLERKS - Two positions. Application deadline: July 26, 1976. Supply & Materiel Division.

147. TECHNICIAN - Document reproduction involving operation of a variety of duplicating equipment. Driver's license and willingness to work shift. Photography & Graphic Arts Division.

148. TECHNICAL SPECIALIST - BS or equivalent in chemistry or biochemistry, and experience with nucleic acids desirable. Assignment involves organic synthesis and analytical biochemistry. Medical Department.

149. TECHNICIAN - AAS degree or equivalent in biochemistry. Familiarity with animal dissection, tissue fractionation, chemical and enzymatic analyses, operation of spectrophotometers, preparative centrifuges and chromatography apparatus desirable. Medical Department.

150. SECRETARY - Seeking AAS degree or equivalent in secretarial science with experience in technical typing and general office procedures. Medical Department.

151. SYSTEMS ANALYST - Design, development and maintenance of graphics software for computer produced publications, implementation and utilization of a data base management system. Associated hardware includes DEC System 10 and PDP-15 interactive graphics system. Require BS or equivalent with several years' relevant experience desirable. Department of Applied Science.

Autos & Auto Supplies

SNOW TIRE - 650-13. \$20. 744-5871.

72 SAAB - 99E, 4-dr, stick, injection, steel radials, mounted studded radial snows, Blaupunkt am/fm radio. Bill, Ext. 2603/2696.

72 CADILLAC - 4-dr, full power, stereo, excel cond. Ext. 2950, 864-5829.

71 CAPRI - 1600, 4-sp, red w/black interior, tape deck, excel gas mi, excel cond. 281-5385.

72 LEMANS - Beige w/saddle interior, immaculate, auto, ac, pdb, 8-track/fm stereo, 2 new tires. \$1700. 281-5385.

69 CADILLAC - DeVille, 4-dr hard top. Under \$1250. Ext. 3267, 473-2594.

67 SAAB - 2-dr sedan, in use, 2 cycle. \$350. Ext. 4240, 286-0295.

68 CHEVY - Auto, ps, ac, am/fm stereo. \$300. Wells, 878-4214 eves.

TIRE - Mobil, new, never used, E-78-14. New \$34.95, selling price \$28. George Woodson, 727-5532.

72 NOVA - Excel cond. \$1495. G. Woodson, 727-5532.

74 KAWASAKI - 400 cc/2 stroke, 13,000 mi, excel cond. \$700. Edwards, Ext. 4027.

73 MG MIDGET - Excel cond, maroon, am/fm, tonneau covers, garaged. \$2000. Lorraine, Ext. 3595 or Pat, 584-7050.

69 FORD - LTD 9 pass wagon, fully equipped, 18 mpg, excel cond, new brakes & trans, must sell. \$800 or best offer. Joan, Ext. 4393, 399-2084.

70 FORD - Country Sedan Wagon, 351 cu in, approx 15 mpg, ps/pb, ac, roof rack, high mi, good cond, avail Aug 20. 929-8595.

66 PONTIAC - Tempest station wagon, a/t, ps, runs good, one owner. 325-0763.

68 VW - Needs motor work, good for parts, new tires, good battery, muffler. \$125 or best offer. Bob, Ext. 4400.

75 HEALD - Super-trike, elec start, auto, fully equip, street legal, tow rig incl. \$600. Mike, 281-6070 after 5.

72 BLAZER - V8, a/t, ps/pdb, am/fm, 8-track stereo, 11x15 lt tires, wt/spoke wheels, curtains, more, excel. 929-4173 eves.

65 CHEVELLE - 6 cyl, upholstery poor, body fair, eng excel. \$150. George, Ext. 4212, 727-6676.

69 FORD - Station wagon, new engine, tires & brakes. Best offer. Ext. 4885, days & weekends.

65 FORD - Wagon. \$250. Bill Sampson, Ext. 4590.

15" RIMS - From Ford model car. \$4 ea or \$7 pair. Joe, Ext. 2321.

67 FORD - Wagon, auto, ps/pb, 351 engine, needs work. \$125. Bob, 281-9237 after 6.

3 TIRES - Vanderbilt-ultimate, polyester fiberglass, bias-belted white walls, H78-14 on GM rims, balanced, excel treads. \$30 ea. Bill, Ext. 2502.

66 NOVA - Wagon, ps/pw, auto, 283 V8, all new tires & 2 snows, body good cond, green. \$600. John, 924-3312.

64 JEEP - 4 wh dr, 1/2 ton pick-up, good cond. \$600. 929-6646.

RIMS - (2) 13" 5-hole, \$3; (2) 15" VW 5 hole, \$5. O. Booker, Ext. 4719.

72 VW - Beetle, excel cond. 1695. Ernie, Ext. 4255.

RIMS - (5) 16 1/2" stock 8 lug rims w/2 good tires. \$65. Sal, Ext. 2514.

69 VW - Bug, 4-spd manual, excel cond. \$650. Ext. 4010, 345-3017 eves.

69 DODGE - Dart Swinger, good cond. \$800. Bak, 929-8199.

68 REBEL - Am. Mot, 6 cyl, blue wagon, 127,000 mi, recent valve job, timing gear, etc, tires good & snows. \$400. L. Phillips, Ext. 4235.

68 CHRYSLER - Station wagon, good cond. 475-0532. TRAILER HITCH - Bolt on frame type, fits Ford Mustang '64-'70. \$5. 363-6940 after 5.

Boats & Marine Supplies

16' WOOD BOAT - 25 hp elec start motor, legal trailer, ready to go. \$550 or best offer. Ext. 4505, 928-2803.

SENSING UNIT - For 6 gal Evinrude & Johnson gas cans. \$1. Bill Espensen, Ext. 3992.

30' PEARSON - 8 sales, Barient 22 s, VHF, depth finder, fully equipped for racing & cruising. \$21,500. 473-7534.

13 1/2' Blue-J SAILBOAT - W/trailer, ready to sail, many extras. Richard, Ext. 4396, 288-2457.

21' FIBERGLASS - '73 winner, 120 Merc I/O, head, dinette, extras, excel cond, full canvas, in water, incl dockage, \$4999 firm. Ext. 4691, 473-8032.

SAILBOAT - Snark model w/"Kool" sails, polystyrene hull, dagger board, sailing manual. \$80. Jack, Ext. 2485.

FOLBOT KAYAK - Holds 2 adults & 2 kids. 878-4878.

Miscellaneous

END TABLES - Maple step. 2 for \$15. 727-1329.

DINETTE SET - Formica top table, 4 chairs, 1 leaf, very good cond; 10'x15' blue/green nylon shag rug. Linda, 698-9121.

ANNALS OF AMERICA - Completely new set, 19 vol, best offer. Ext. 4885 days & weekends.

TV - Color, Motorola console, needs work, best offer. Jacob, Ext. 4340 or 363-6787.

WHIRLPOOL WASHER - \$150; Sears Kenmore dishwasher, \$70; portable typewriter, \$25; almost antique elec sewing machine, works, \$15; b/w TV, Admiral, \$50; TV antenna, \$15. Ext. 3603.

AIR CONDITIONER - Chrysler, vertical type. \$25. 928-0297.

CEDAR CHEST - Large storage area, light walnut finish. \$25. 924-5192 eves.

AMPLIFIER - Dyna 40 w, fm, pre-amp, Bosak speaker, cheap. Osgood, Ext. 3978 or 286-2561.

FURNITURE - Occasional tables, Danish mod reclining chair, book cases, large desk, antique high back wood chairs, etc. Osgood, Ext. 3978, 286-2561.

CRIB - Good cond, \$10, folding high chair, \$5. Nakadomari, 281-8438.

FREE - 2 adorable black kittens, 4 mo old, will help spay. Ext. 2874, 289-8459 after 5:30.

SIBERIAN HUSKY PUPS - AKC, champion lines, reds & blacks, bred for quality & temperament, shots, wormed. 281-1623.

MALTESE PUPPIES - 7 wks, AKC. Devito, 475-1016.

VOLVO - Am radio, excel cond. \$15. Ann, Ext. 3143.

YORKSHIRE TERRIER PUPPIES - Male, 9 wks, 1st shot, health cert, top quality, sturdy, AKC. \$350, up. Daly, Ext. 2902, 475-2627 eves.

10-SPD BICYCLE - Peugeot UO8, 23" frame, 27x1 1/2" tires, Simplex derailleur, Mafac brakes, center pull, white. \$75. Mike, Ext. 3390.

STEAMER TRUNK - Very large, excel cond & quality. \$30. 744-7861.

2 METER FM - Drake TR-22C w/34-94, 94-94, 22-82, 52-52 installed, w/ni-cards, case, manual, orig box, excel. \$160. 929-6646.

CONTENTS OF HOME - Furniture, rugs, glassware, dishes, cut glass, clothes, brica brac. 472-0509.

3 FISH TANKS - 10-gal, fully equipped w/stand & fish. 924-6885.

JEWELRY - 18 carat Peruvian gold. 289-8182 after 6.

WASHING MACHINE - Whirlpool, 2-spd, 14 lb capacity, portable or installed. Asking \$135. Shapiro, 924-6961 eves.

CHAIRS - Antique high back dining chairs, need refurbishing. \$50 for pair. Osgood, Ext. 3978, 286-2561.

FREEZER - Upright, large. \$80. Osgood, Ext. 3978, 286-2561.

DESK - Old army desk, large, 34"x50" top, \$40; 3 nesting tables, \$15. Osgood, Ext. 3978, 286-2561.

LAB RETRIEVER PUPPIES - 1 male, 1 female, all shots. 281-4010.

ANTIQUE DESK - Solid wood roll top, not slat type. \$80. 924-5192 eves.

SHORT WAVE RECEIVER - Hammarlund w/power supply unit, rack type. \$25. 924-5192 eves.

PLANT STAND - Metal, 4 tiers, 8 trays, 2 grow lux fluorescent fixtures attached, excel cond. 924-5192 eves.

BUREAU - Antique, early Victorian small bureau w/ attached framed mirror, rose marble top, beautiful wood. \$80. 924-5192 eves.

CHAIRS - 2 antique Shaker arm chairs, \$15 ea; early Victorian end table, pedestal base, \$25. 924-5192 eves.

YARD SALE - July 16-17, 3 Millard Ave, Miller Place, off Pipe Stave Hollow Rd, many items. 473-7379.

BABY CAR SEAT - \$10; Waring 7-spd blender, '75, \$10; Magicubes, 6/\$1; camera gadget bag, \$2. Ext. 4010, 345-3017 eves.

HEADPHONES - Royal sound, similar to Koss HV-4A's, hardly used. 286-0384.

SKIS - 185 cm Rossignol Strato 105 w/Salomon 404 bindings, good cond. \$75. 286-0384.

SOFA - Walter Lippman's, \$5; Chair, \$5, 2 end tables, \$5, dining rm chair, \$2. Bak, 929-8199.

CRIB - W/mattress, \$20; stroller, \$2; writing desk, \$20. Bak, 929-8199.

TRAVEL TRAILER - 24', Invader, fully self-contained, like new. 732-3919.

3 END TABLES - Good cond, \$45; 3 pc sectional, fair cond, \$100; 3M copier, \$175; metal desk, \$100. Cathy, Ext. 2456, 732-6262.

FISH TANK - 55 gal glass, w/glass top, fluorescent light & black wrought iron stand. Complete. \$55. 884-3722.

FURNITURE - Red velvet fireside chairs, \$65 for pair; armchairs, \$95 for pair, coffee table, \$25. 473-5585.

STEREO CONSOLE - Metz, record player, am/fm, shortwave, good cond. \$100. 694-6053.

KITCHEN TABLE - 36"x48" wood grain formica top table w/12" leaf & 6 chairs. \$45. 694-6053.

BEDRM SET - Triple dresser w/mirror, double bed, box spring & mattress, 2 night tables, chest of drawers, all wood, excel cond. \$500. 694-6053.

GARAGE SALE - July 17 & 18, 10-5, 229 Munsell Rd, E Patchogue.

FURNITURE - Spanish dining rm set, \$200; Boy's bedrm incl skipper's bed, desk, stool, dresser, \$110; dryer, lg capacity, needs work. \$20. 286-0405.

BICYCLE - 20", for boy or girl. \$5. 744-3744.

RABBIT - 1-yr old white albino, cage and water bottle incl. Make offer. Dick, Ext. 3910, 732-7564.

SIBERIAN HUSKY PUPS - AKC registered, 5-wks old, choose pup now, all shots incl. \$125. 924-4653, 924-3919 after 5.

GOLF BAG - New women's \$15; kitchen set, excel cond, \$30; living rm lamp, \$8. 473-0256 after 4:30.

SEKONIC LIGHT METER - Zoom. \$15. 929-6646.

SURF BOARD - 9 1/2' Tiki, excel cond. \$50. Joe Weynand, Ext. 3303.

CLAM RAKE HANDLES - (1) T-handle, 12', \$5; (1) extension, 10', \$3. 589-3269.

POLISHER-SHAMPOOER - For floor or rugs, excel cond. \$12. 589-3269.

TICKETS - (2) for Annie Get Your Gun, Gateway, Bellport, July 20. Bernstein, 286-1339.

REFRIGERATOR-FREEZER - Frigidaire, 16 cu ft, charcoal color, left-hand door. \$55. F. Horn, Ext. 3087, 589-2759.

BEDRM SET - Children's, incl 2 dressers, corner desk. \$45. 744-4984.

PHOTOGRAPHIC ENLARGER - \$40. 744-4984.

PUPPIES - French mini poodle, black, silver, males/females. \$35 each. 981-4857.

Ads left out of this issue because of lack of space need not be re-submitted in order to run in next week's issue

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 Rent

YAPHANK - 2 br house, unfurnished, 2 acres wooded, immed occupancy. \$250/mo + util. Ext. 3675, 924-3528.

PATCHOGUE VILLAGE - Furnished rm, priv home, off-street parking, village conveniences, suitable congenial mature woman. 475-2627 after 6.

HALESITE - 4 br house, near water, 45 min from Lab, tennis court, deck, one acre, furnished, avail for 1 yr from Sept 1. 421-9238.

ROCKY PT - 3 br house, short walk to beach, fireplace, large fenced yard, avail Aug 1. \$250/mo + util. 744-4984.

ROCKY PT - 3 br, lr, dining area, kit, big bath, full basement, refrig, washer & dryer, drapes, carpet. 744-4988.

WADING RIVER - New 3 br hi ranch, 3 blocks from water, priv beach, 15 min from Lab, yearly rental avail Aug 1. \$350/mo. Ext. 3121, 744-5261.

VERMONT - 3 br mobile home on 10 acres, close to golf, tennis, fishing, avail weekly or weekends. Bob, 473-8186 after 6.

BROOKHAVEN HAMLET - Excel location nearby, 3 br, finished basement, 2 fireplaces, garage, screened porch, large dr, beautifully landscaped. Ext. 3694.

VERMONT - Chalet, sleeps 12, all conveniences, lake swimming, fishing, hiking, located on 500 acres woodland, nearby theatre, Marlboro music, horseback riding, golf, tennis, rented weekly, monthly, seasonal. 757-5599.

WADING RIVER - 5 br house, garage, backyard, 3 min walk to priv beach, 20 min from Lab, avail mid-Aug/Sept. \$400. 929-8595.

EAST PATCHOGUE - Spacious 3 br Dutch colonial, furnished, all appliances, lovely setting, 1 1/2 acres, avail Sept 1 for 1-yr rental. 289-3023.

MILLER PLACE - Waterfront, priv beach, 7 rms, 4 br, 2 baths, fireplace, country kit, 1 yr lease from Sept 1, no pets. \$425/mo + util estimated at \$70/mo. 928-0348.

For Sale

SETAUKET - Spacious 4 br, 2 bath ranch, family rm w/full wall fireplace, skylights, eat-in-kitch w/self-cleaning oven, full basement, 2-car garage, patio, heavily wooded. 751-7415.

BELLPORT - Spacious 5 br, 2 1/2 bath, lg country kit, lr, dr, family rm, 2-car garage, sauna, 1 1/2 acres, screened patio, front porch, low 50's. 286-1091.

CALVERTON - 3 br townhouse, 1 1/2 baths, ac, w/w, sundeck, portico. \$25,000. 727-0501.

BLDG PLOT - 1 acre, 100'x400', fully wooded, ideally located w/individual custom homes, quiet rural country rd, minutes from lab. Asking \$14,500, negotiable. 924-3236.

BELLPORT VILLAGE - 8 rm house, 5 br, kitchen, lr, porch, 1 1/2 baths, dock privileges, low taxes, reasonable. Lu, 289-9407.

PATCHOGUE VILLAGE - 3 br ranch, expansion attic, finished basement, most appliances, country kitchen, attached garage, exterior maintenance free. \$34,000. Ext. 2290, 475-7694.

1 ACRE POCONOS - Water, elec, horseback riding, skiing, swimming, tennis, priv community, gate guard. Ext. 3870, 732-3003.

ROCKY PT - Custom ranch, water view, 1/2 acre, many extras. 744-7861.

BELLPORT - Raised ranch, 5 br, 1 1/4 bath, 9 rms, deck, garage, 100'x165' lot, low 40's. Osgood, Ext. 3978, 286-2561.

SETAUKET - Colonial, 4 br, lr w/double glass doors overlooking little bay, 1/2 acre, 2-car garage, full basement. (212)737-2759.

SHOREHAM - Cape Cod, 3 br, den, lr w/fireplace, dr, 2 baths, w/w, s/s, 2-car garage, 1/2 acre, beach rights. \$60,000. 744-8949.

WADING RIVER - Lovely 1/2 acre wooded lot, 3 br, lg 2-car garage, full basement, fireplace, priv beach, washer, dryer, freezer. \$44,000. Al, Ext. 3535, 929-6940.

PORT JEFFERSON - Harbor Hills, 1/2 block from golf course, 4-5 br Colonial, 2 1/2 baths, family rm, lr, dr, eat-in kit, fireplace, finished basement, 2-car garage, porch, 1/2 acre. \$68,900. 473-5386.

EASTPORT - Cape Cod, 3 br, formal dr, w/w carpeting, hot water heat, 1 1/2 car garage, walking distance to school & stores, residential area, low taxes. \$39,000. Ext. 4551, 325-0013.

Wanted

CAR SEAT - For child. 878-4878.

ALUMINUM BOAT - 10-12' w/semi-V hull, reasonable. 281-3263.

FURNITURE - Shut-in needs full size bed, dresser, comfortable chair, studio couch, on tight budget. 286-2098.

CHILD CARRIER - For rear wheel of bike, molded plastic preferred, to hold 40 lb child. Ext. 2026, 286-1396.

HOME - For 4 pure white kittens, used to outdoors. 929-4522.

SAXOPHONE - Used. 744-2539.

HOME - For kittens, 2 blk, 1 grey, 1 multicolor. Randy, Ext. 3502, 878-8968.

HOME - For great dane, spayed female, about a yr old, lovely disposition but we already have a dog. Don or Genie, 286-2267.

TWIN BED - Good cond, reasonable. Joan, Ext. 4393, 399-2084.

DOG TRAINER - Capable of handling obstinate 8 mo old Doberman-Rhodesian Ridgeback pup. Joan, Ext. 4393, 399-2084.

ELECTRIC TYPEWRITER - Good cond, reasonable. 281-7763.

ENGINE - 4 or 5 hp in good enough cond for 14 yr old mechanic to work on, free-to-cheap. Frank, Ext. 4659.

DEHUMIDIFIER - Working cond, reasonable. Tony, Ext. 3499.

CLARINET - For beginner, reasonable. 744-8917.

EARTHENWARE CROCK - 2 or 3 gal size. Frank, Ext. 2410, 281-7113 eves.

GUITAR TEACHER - Advanced guitar player to teach a beginner. Denise, 289-4821.

HOME - For 11 mo old dog, part shepherd & cocker spaniel, good pet for kids & good watch dog. Ext. 3631.

Car Pools

EAST SETAUKET - Wish to form pool w/1 more driver from area. Paul, Ext. 2961.