



HOTLINE

PRINCETON PLASMA PHYSICS LABORATORY

Vol. 2, No. 18

July 7, 1981

HOTLINE Survey

We asked you what you thought, and you sure told us!

The results are in in the first HOTLINE reader pool, and we've tallied the responses. Approximately 250 of you sat down and filled out a questionnaire; that adds up to a 17.6 percent response rate. We'd like to thank those individuals who took the time to answer our questions — we appreciate your help.

And what answers! While some people were hesitant about revealing their names, 104 hardy souls signed their forms. Comments ranged from simple answers to our multiple-choice questions to a two page, full-blown critique of our publishing efforts.

Most respondents gave HOTLINE an average grade in both usefulness and accuracy. Articles are clearly understandable to a large majority of respondents.

Regarding what readers would like to see more of, most respondents want more general information. That was an expected result, but the strong interest in reading about other laboratories' programs came as a surprise. A substantial number of respondents asked for more technical articles, as well as a general increase in the overall informational content of HOTLINE. We will attempt to satisfy many of our readers' requests with our future editions.

Remember, however, that there will always be items of a "bulletin board" nature in HOTLINE. Due to our wide distribution, many departments use HOTLINE for dissemination of important news to the laboratory at large. Often these articles are followed (or preceeded, as in the case of the PPL picnic) by bulletin board notices or flyers on the upcoming event. There's no way to prevent such duplication, and we hope the disgruntled members of our audience will understand.

As the responses to our survey clearly indicate, PPL employees are a very diverse group. Readers must realize that we can't please everyone all the time; we must pick and choose what is suitable for HOTLINE. But with the guidance your questionnaire answers have provided, we will be attempting to tailor future HOTLINEs to better serve your needs.

While most respondents had never suggested a story idea to HOTLINE, we hope those figures will change in the future. HOTLINE is your publication: don't hesitate to call us at ext. 2754 with story ideas, news or comments. We also encourage PPL staff to submit articles, especially ones they've written themselves.

So if you've got a story that you think needs telling, let us know about it — we can help get your message across.

Symposium Slated

The Technology Department Symposium will be held July 8 at 4 p.m. in the Melvin B. Gottlieb auditorium.

Dr. W. O. Wuster, Project Manager of the JET project located in Culham, England, will speak on "The Status of JET". Dr. Wuster's talk will describe the recent advances of the JET device, as well as construction and assembly schedules.

Refreshments will be served.

Cost-Cutting Commended

News of the recently established Employee Energy Awareness Committee actions has brought to light the individual cost reduction program of Art Chaykowsky.

Art, the Scheduler/Expediter of PPL plant facilities, has monitored the costs and supply of fuel on hand for firing the many on-site boilers used for heating and air conditioning. Through Art's individual efforts of delaying purchases for the best price, a \$1,300 saving was realized in a recent fuel oil delivery.

Art was commended for his action by Manager of Project Engineering Frank Fumia.

Telephone Costs

Over the past year, the Telecommunications Office has been working closely with telephone users to help reduce PPL toll charges. These efforts appear to be working.

As shown in the chart at the right, the laboratory's monthly toll cost has dropped from an average of \$15,775 to an average of \$13,976 in spite of laboratory growth. If PPL placed commercial toll calls at last year's rate, the monthly bill would be over \$19,000, not under \$14,000. This \$63,900 per year savings provides monies that can be used for other programs at PPL.

Additional FTS lines have been added at PPL to improve access to the system. FTS is continuously expanding direct-dial access to commercial area codes to simplify use of the system.

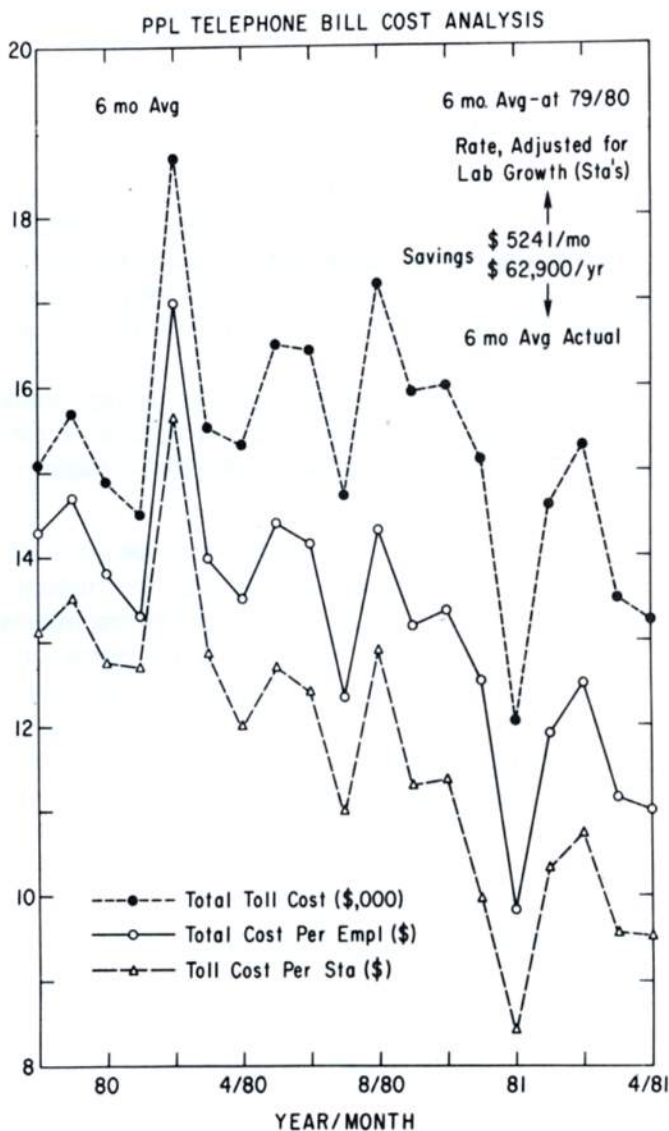
Robert Smart and Marjorie Barnett welcome suggestions on how to further reduce these toll costs. Laboratory support of these efforts is appreciated.

Secretarial/Clerical Pool

The Personnel Office is in the process of recruiting permanent/part-time secretarial and clerical personnel to become members of a PPL temporary office pool. These positions will be on an "on-call" basis to fill in for vacation relief, illness and other emergencies.

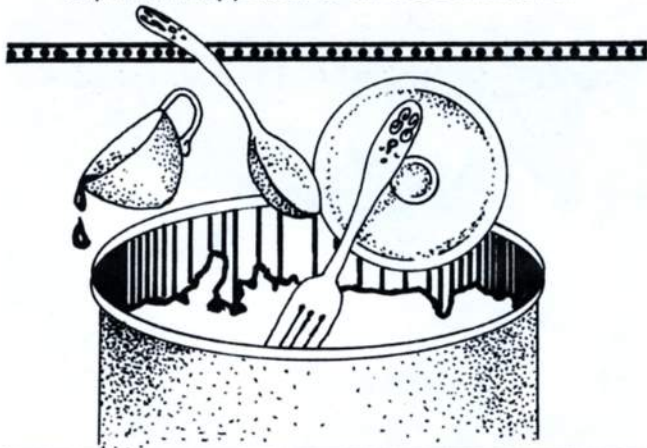
Secretarial and office assistants with good typing and steno skills are being sought. Members of the laboratory community are encouraged to inform friends and relatives of this new program.

Direct all inquiries to Al Drake, Personnel Office, ext. 2047.



And The Dish Ran Away With The Spoon

or, What Happened to all the Silverware?



Utensils that aren't plastic
Just seem to disappear
Into offices and trash cans,
And their cost is getting dear.

So please won't you be careful
To return what you have borrowed?
Or we'll be living in a plastic world
Tomorrow and tomorrow.

Addendum

Robert Gulay, chairman of the Energy Administration Committee, recently commended operating technician Ed Rogers and supervisor Ben Velivis for the part both men played in saving the laboratory almost \$13,000 in electric bills.

Rogers, on duty in the MG control room in mid-May, noted a power demand rise and notified Velivis of the increase. Velivis in turn called Marvin Ritchie, a member of the Electric Power Subcommittee, who informed Plant Maintenance of the situation. Turning several space cooling chillers off throughout the lab helped curtail the demand increase.

Gulay thanked all three men for "caring enough to advise each other of the problem, and to talk to the right person to get something done about it."

Energy Library

A library for the collection and dissemination of energy saving information throughout the laboratory has been established in the stockroom area of the A-Site Coil Shop. The major oil companies, Jersey Central Power and Light, Public Service Electric and Gas, and DOE headquarters in Washington have all contributed various materials to the collection.

The library is expected to be in general use by the first week of August. Persons interested in using the collection should call J. Charles Wood at ext. 3061 between 10 and 10:15 a.m., between 12 and 12:30 p.m., or between 3 and 3:15 p.m. Monday through Friday. Written material requests should be sent to J. Charles Wood, Coil Shop, A-Site.

To The Editor Of HOTLINE:

Among the life-shortening diseases, cancer is number two. Although it has no cure as yet, there are numerous ways to save the lives of its victims.

Cancer is a disease whereby cells in an organ begin to grow wild, no longer performing their normal tasks. From a small beginning, the problem spreads — sometimes slowly — to adjacent cells. If this process is allowed to continue, the organ will eventually drop below its specified minimum performance. If the organ is necessary for life, death will follow.

The other grave risk involves numbers of cancer cells that may become detached from the original site and be carried to another part of the body. These cells may start a colony and eventually become a severe problem at the new site.

The reason the cells depart from their normal behavior pattern is not known, except that repeated irritation of an organ seems to be a general cause. That is a major help in combatting the most severe cancer of them all: lung cancer.

This disease is caused almost exclusively (some leave out the word "almost") by cigarette smoking.

One cigarette per day does not do any harm, but smoking 30 per day for 30 to 35 years gives one a 10% risk of contracting lung cancer. Apparently, after the lungs have been irritated by smoke 365,000 times, their repair mechanisms become overwhelmed and symptoms appear. By then, mortality is 92% overall. The solution is obvious to anybody with a technical bend: do not overload the system.

Skin cancer is the other cancer with a clearly indicated source: ultra-violet radiation. The suggestion there is to go easy on sun bathing.

What the irritants are, if any, in other types of cancer is usually not known. The watchword is removing the tumor while it is still small and localized. Individuals age 40 and over should submit to a physical every year, those aged 30 to 39 every two years. One should also go easy on sun bathing and limit cigarette smoking to a smoking product D • Y not to exceed 500 for life,

where D = number of cigarettes smoked per day

Y = number of years smoked at rate D .

In the early part of the twentieth century, cancer was a very bad disease with little hope of survival. In the 1930's, the U.S. survival rate had risen to 20%, then to 25% in the 1940's. Currently it is approaching 45-50%. PPL could exceed a 75% survival rate before the end of this decade.

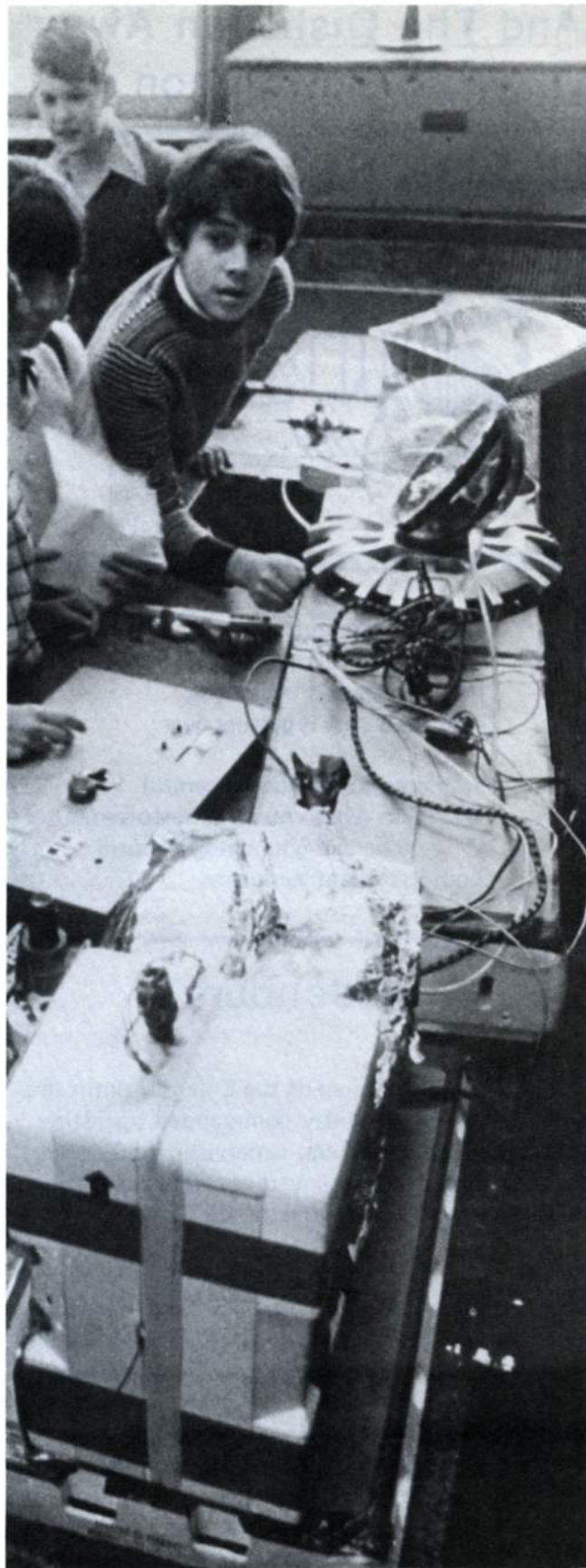
Good grief, what are we waiting for?

E. de Haas

Junior SEERs Tour PPL

Yaroslav Shoikhet and Michael Masterov got a chance to see their science project enlarged to real life proportions when they toured PPL recently. The boys won the National Energy Foundation's SEER-USA competition by constructing a tokamak mock-up.

Yaroslav was born in Odessa, Russia 13 years ago, and is a seventh grader at IS 187 in Fort Washing-



The boys' mock-up of a tokamak and its attendant systems.

ton, Manhattan. Michael, his 13-year-old classmate, hails from Leningrad. Both have been in the United States for approximately eight years.

Michael's interest in science dates from the time he saw a microscope in a shop window as a child, becoming fascinated with it. Yaro, as a youngster, saw the back of a radio opened and was surprised to see electrical wires and tubes. "I always thought there was a person in there!" he recalled wryly.

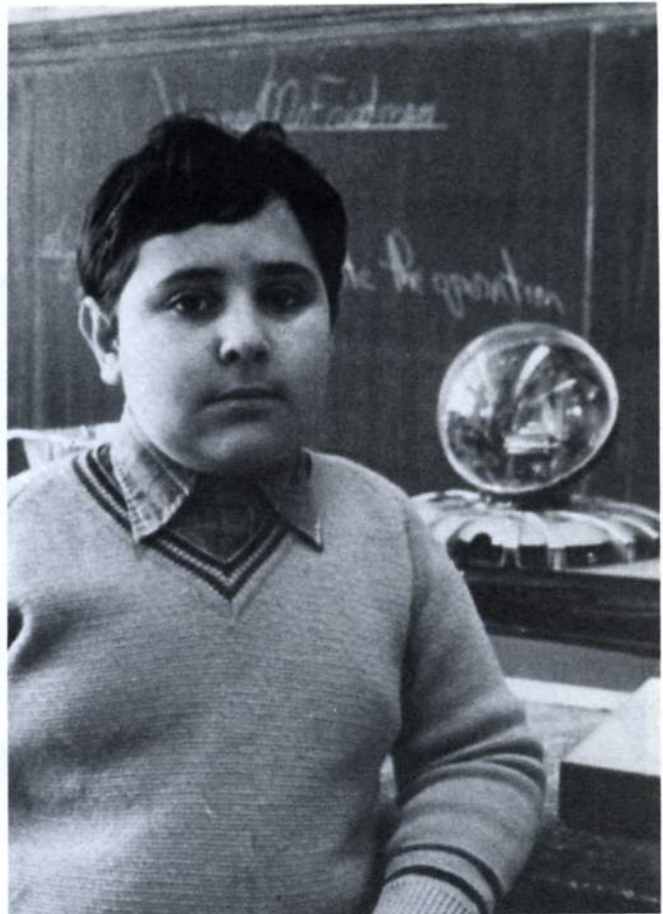
Both named science as their favorite school subject, so it seems natural that both were attracted to the NEF's Student Exposition and Energy Resources (SEER) program. SEER provides secondary school students with the opportunity to construct projects demonstrating new energy sources, or new ways to obtain and use energy. The projects, which range from dioramas through full-blown mock-ups, are judged on a local and national level. A national grand prize is awarded, and many prize-winning entrants are selected to visit energy-related industries around the world.

Although this was Michael's first time in the competition, Yaro was SEER's youngest participant last year. Why did the two decide to join forces on their project? Michael explained that "I couldn't find a project, and Yaro didn't think he could finish his in time. We thought that by working together we could get everything done."

The idea of building a simulated tokamak stemmed from an article on the subject, published in the Fusion Energy Foundation's student magazine "Young Scientist". A meeting with NEF staff also provided impetus, as did the help of the boys' science teacher, District Science Coordinator Herb Friedman.

"Once I decided to build the reactor," Yaro said, "I began the research in October and the heavy work in December. We worked on it a lot prior to construction, planning finishing touches. Every step sparked a new idea, and I got some ideas while working — or even while watching TV!"

The tokamak features a 10 switch control board, manual and computerized operation, memory disk drive, and a monitoring system constructed from washing machine parts. The entire mock-up, in



Michael Masterov

fact, is an amalgam of bits and pieces the boys scrounged from everywhere.

Old irons, toasters, guitar strings, small missile parts, a bird's toy, a hairdryer and Christmas lights all found their way into the reactor — as did a bit of the kitchen sink, in the form of piping for the water flow. The boys pointed out that only specific parts of each "cannibalized" item were used, and estimated the total cost of construction at approximately \$100. If the parts had all been purchased new at an electronics store, the project might have cost over \$1,500.

The mock-up itself consists of a 3'2" reactor and its attendant systems. The reactor sphere was a globe in its former life, and now has a simulated tesla coil (courtesy of the hairdryer) imbedded in it. The "lasers" are Christmas lights reflected through chandelier prisms. The entire structure is plated with metal transformer parts.

Five 45 volt batteries are used to power large magnets for the reactor, which also includes its own



Yaroslav Shoiket

water cooling system. The entire set-up is mounted on hubcaps, which are mounted on a styrofoam fruit case. Cables and wires "run everywhere!", according to Yaro.

The current mock-up is the fifth incarnation of the project. The first was a small showcase model that simply flashed lights to illustrate its function. Always thinking of improvements, the boys expanded that model to six feet long. That size was later reduced when they discovered a shorter length increased coil heat. After coping with various pressure, temperature and power output problems, the final model was completed. Yaro and Michael report that their final product is the most efficient of the five.

The boys won the top SEER-USA award after five rounds of competition. Round one came at their school, where they took first prize after competing against approximately 150 entrants from kindergarten through eighth grade. The duo also placed

first out of 400 entrants in the Manhattan Borough Science Fair; first out of 30 entrants in the District 6 Science Fair; and first in SEER-NY, which encompassed approximately 300 entrants on the junior high level from throughout the New York area.

Then came the final test: SEER-USA, where students from California, Virginia, New York, New Jersey, Connecticut and Virginia vied for top honors. Eighteen projects were entered in the competition, and the boys placed first in the junior division June 2. They were among those honored at a SEER dinner, joining speaker William F. Buckley on the stage. The pair will be visiting Washington in the near future, flying there on a turboprop plane commemorating Wiley Post's flight. They will also meet President Reagan, schedule permitting.

Were the boys nervous before the national competition? "We were nervous before every one," asserted Yaro. Michael added that "we were the most nervous about our school competition, and that's the one we should have been the least nervous about!"

The two expect to collaborate on their SEER project next year, since Michael's theoretical bent seems to complement Yaro's more practical electronics talents. Future plans for Yaro lean toward electronics or engineering, while Michael's interested in genetic or nuclear engineering as a career.

And their impression of PPL? Both boys report being "very impressed" by the lab. "We thought our project was extremely complex," Yaro exclaimed, "but this is incredible!"

Course Planned



A technical typing course will be offered at the laboratory in the near future. Anyone interested in taking the course should contact Judy Duffy at ext. 2602 by July 17.

HOUSE WANTED — PPL employee interested in renting a three bedroom unfurnished house in the East Windsor/West Windsor area. Kids and pets should be allowed. August 1 or September 1 availability required. Contact Judy Duffy, ext. 2602.

Stockroom Notes

DOE has regulated the amount of stores inventory the lab is authorized to stock during this fiscal year. The stores inventory has already been drawn down from a January high of \$1.2M on-hand and on-order to the current level of \$848K on-hand and on-order. A further reduction of \$109K is required to meet mandatory year-end ceilings.

The stockroom wishes to provide the best possible support within available resources. During a recent meeting with the ERC, one area pinpointed for improvement was communications between the stockroom users and Material Control. To this end, forms and cards have been developed to provide input from the stockroom and catalog users.

A Stockroom Inquiry Card, Catalog Inquiry Card, Daily Out-of-Stock sheet and a New Item Request form have been placed in the stockrooms for your use. Prompt action will be taken on your inquiry; you will be notified by phone of the results.



PPL employees interested in playing volleyball can join the group of enthusiasts already playing on Thursdays after work. There are not set teams; the competition is "just for fun".

All those interested in participating should contact Anne Golden at ext. 2444 or Sheryl Cargill at ext. 3277.

The PPL Hotline is issued by the Princeton University Plasma Physics Laboratory, a research facility supported by the U. S. Department of Energy. Correspondence should be directed to PPL Information Services, Module 2, C-Site, James Forrestal Campus, ext. 2754.

Another avenue open for user communications is the Stockroom Users Committee. The committee was formed in 1976 to serve as an interface between stockroom management and users. Each division/branch is authorized to have representatives on the committee. The committee meets on the third Thursday of the month in the 1-N conference room at 9:30 a.m.

Current user representatives include chairman Paul McCann of the Electronic Division; vice chairman John Garde of the Neutral Beam, NBS-TFTR; and members L. Hurley, Engineering Services; A. Chaykowsky, Plant Maintenance and Operations; D. DeBonis, AC Power Section; J. Frankenburg, Fabrications/Operations/Maintenance; N. Greenough, Engineering Division; G. Katona, Mechanical and Aerospace Engineering Department; J. Mayercak, Computer Division; W. Mycock, PLT; and M. Oldaker, Control Section.

If your division/branch would like to be represented, please contact Chris Gillars at ext. 2853 or Paul McCann at ext. 2513.

PICNIC "81"

Over 1,100 people partook of the hayrides, the hot air balloon, the food and the fun at the annual PPL Picnic June 20.

Six clowns (Millie Lefler and her two granddaughters, Debbie and John Anastasio and Joyce Lafharis) helped entertain the youngsters during the afternoon. The kids also enjoyed the sandpile, space walk, pony rides and a magic show by Mike Goldman.

Their parents danced to music played by a deejay, tossed horseshoes and helped themselves to the picnic fare provided. According to picnic committee chairman Len Thomas, 23 barrels of beer were consumed during the afternoon, along with nine barrels of birch beer.

In addition to Len, the picnic committee was composed of Mary Alice Eubank, Anne Golden, Sheryl Cargill, Kris Mann, Ed Gilsenan and John Anastasio.

Pictures from the picnic appear on the following page.

