

## Giving TFTR A 'Hand'

by Phyllis Rieger

What weighs 25,000 lbs., measures 31 ft long (unfolded) and at this stage looks like a giant erector set?

The answer is the maintenance manipulator which arrived at PPPL from West Germany on August 2. It will be used to perform designated tasks inside the vacuum torus of the Tokamak Fusion Test Reactor (TFTR). The maintenance tasks the manipulator will do include visual inspection, in-vessel leak detection and replacement of protective carbon tiles.

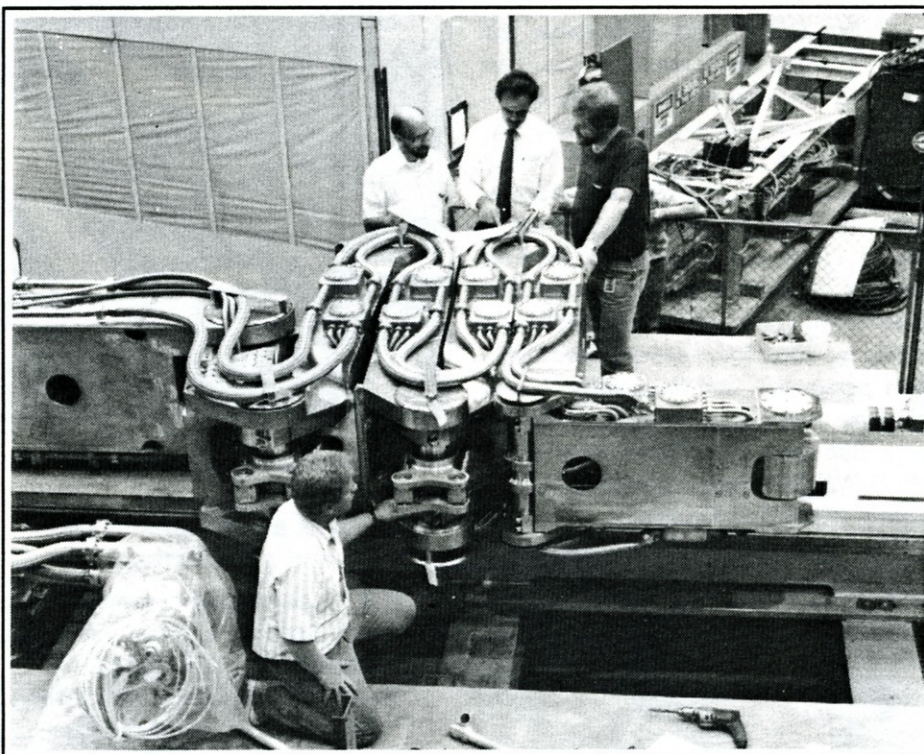
According to Roy Little, head of the Deuterium-Tritium (D-T) Systems Division, under whose supervision is the Shielding and Manipulator Branch, "This manipulator's arrival signals another step in the TFTR plan preparation for the D-T program."

Once the concrete-block igloo wall shield for TFTR is built, human access to almost all machine components and diagnostics will be severely restricted so a way had to be devised to do certain tasks.

PPPL engineer Douglas Loesser, who's been with the project since its inception in 1984, said, "The manipulator, which has a basic working payload capacity of 500 lbs, consists of links and joints enabling it to move 180° around the TFTR vacuum torus while the temperature could be up to 150°C. This manipulator will be controlled by trained PPPL personnel who'll monitor its activities from a control booth recently constructed in the TFTR mock-up area outside the Test Cell at D-Site. The manipulator is also being assembled now in this area."

Doug explained the manipulator is put together ahead of time to conduct in-house tests. This will be occurring over the next eight months.

Doug pointed out that the design and fabrication of the maintenance manipulator has been a project of international ef-



(Photo by John Peoples)

*The TFTR maintenance manipulator arrived at PPPL on August 2 from West Germany. The manipulator has a basic working payload capacity of 500 lbs and consists of links and joints enabling it to move 180° around the TFTR vacuum torus.*

forts. The project began with PPPL and Canadian Fusion Fuels Technology Project sharing costs but later PPPL with Kernforschungszenrum Karlsruhe (KfK) of West Germany took over and signed a cost-sharing agreement.

Following discussions with engineers at the Japan Atomic Energy Research Institute (JAERI) JT-60 device, PPPL placed an order for an in-vacuum, high-sensitivity ion-gauge-type leak detector with Seiko. Seiko developed this device with JAERI's support.

Under another cost-sharing agreement, Commissariat à l'Energie Atomique (CEA), the French nuclear research organization, worked with PPPL personnel and supplied the vision and lighting sys-

tem for the manipulator.

According to Doug, "A project of this magnitude requires the cooperation of a number of different Laboratory departments and personnel. Some of these include Carl Bunting and Mike McGowan who are the lead technicians working with a number of others from Technical Services. Dan Kungl, head of the Shielding and Manipulator Branch, is the cost control manager. Phil Heitzenroeder is the Manipulator Branch Head and Hal Anderson is the cognizant electrical engineer.

"People from the D-T Systems Division, the Mechanical Engineering Division and the Vacuum and Cryogenics Branch have contributed their specialties," said Doug. ★

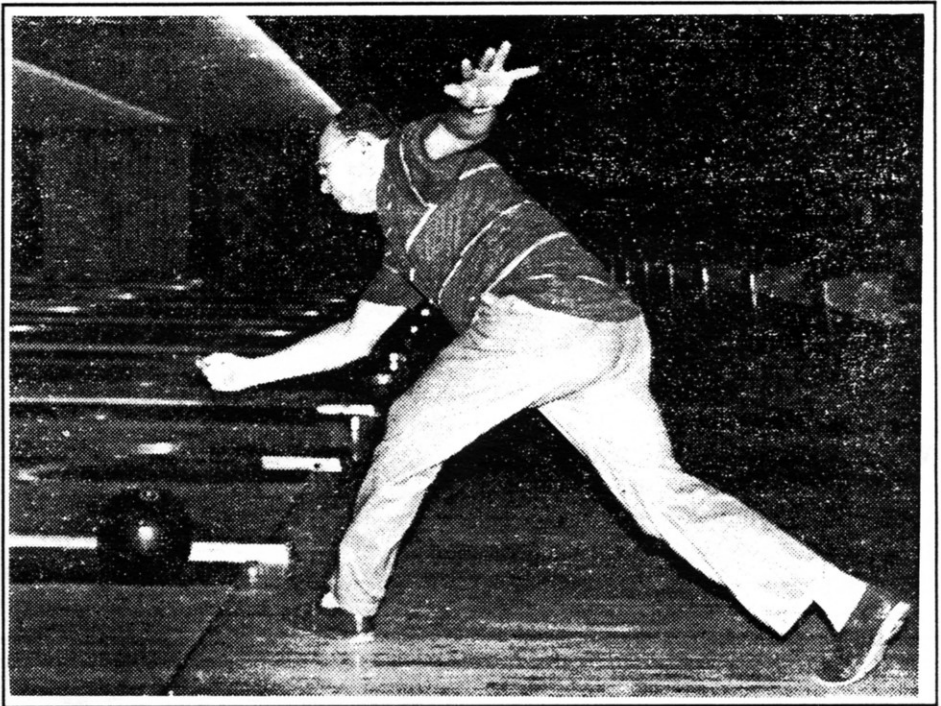


# Top Bowler Bob Mosley Featured in Times of Trenton Article

Recently, PPPL employee Bob Mosley was featured in an article in *The Times of Trenton*. Bob, an avid and successful bowler for over thirty years, is an expediter in the C-Site Tech Shop. He is presently the President of the Hamilton Mixed Majors, a mixed bowling league consisting of ten teams that bowl once a week at Hamilton Lanes.

When talking with Bob about his many bowling achievements, you can sense his love and respect for the sport. Bob feels that being inducted into the Mercer County [Bowling] Hall of Fame is one of his most satisfying accomplishments. He said, "In any sport you participate in, either as a professional or as an amateur, to achieve induction into that sport's Hall of Fame has to be everyone's dream. Bowling has been very good to me, both personally and financially. It has given me many friends over the years."

Bob and *The Times* have given HOTLINE permission to reprint the following article by Sal Laird.



Bob Mosley demonstrates the bowling form that has helped keep the pins falling over the years.

## Mosley is a Champion Bowler and a Gentleman

Bob Mosley is known to many as the gentleman bowler, a man who treats people and bowling with respect.

He started bowling in 1952 at the age of 17 and learned the secrets of the game quickly. Bowling became a big part of his life and he earned the respect of many bowlers, for Bob has become one of the most competitive men in area bowling centers. His first 300 game and 700 series came only six years after he took up the sport. His love of the sport has lasted 36 years and Mosley is still making ten pins fall better than bowlers half his age.

Here are just some of Bob's accomplishments:

- Two 300 games.
- One 299 game.
- Fifteen games or more over 270.
- Eighteen or more 700 series with a 775 high series.
- He has averaged over 190 for the past 30 years.
- He has won 15 league championships, seven high-average awards and five high-game awards.

- Mosley has won seven Sage Club tournaments, the Curtis Holiday Tournament, the City Doubles Championship, the Debbie Strickler Memorial Tournament, the Three for the Money Scratch Tournament, an Adult Child Championship and the Mixed Marathon Tournament.
- He also has been a finalist in many Times of Trenton Championship tournaments, New Jersey State Bowling Association Tournaments and many other bowling events across the Tri-State Area.

In 1984 Bob was inducted into the Mercer County Hall of Fame for his many bowling achievements and was nominated for bowler of the year twice.

At one time he became a certified Junior bowling coach and coached many junior bowlers in the area including his three sons, Bob Jr., Bruce and Brian.

**HERE ARE** some of his views on bowling.

**Q: Your goals in bowling?**

**A:** I have achieved one goal — to bowl a 300 game — but I have not bowled an 800 series, so I would like to bowl one.

**Q: How do you think bowling has changed in the last 20 years?**



Bob Mosely holds the plaque presented in honor of his *Times* bowling profile.

A: I think three things have changed. A lot of bowlers have changed from being a team player to more of an individual player. The new lane conditions and many types of new balls on the market have added to the bowler's scoring ability.

**Q: At one time you were considering turning pro, why didn't you?**

A: It was so hard to get a sponsor and I was doing so well locally with tournaments.

**Q: With bowlers using two or more balls why do you only use one?**

A: I learned to adjust my target on the lane to bowl better than to change balls. This has worked very well for me.

**Q: Being a veteran of the game, do you think the new lane conditions have helped the game?**

A: No, I think the new short oil conditions have taken away a lot of the skill of the game and let some bowlers become better than they really are. [It] gives a false confidence to them. I have seen many different types of lane conditions and enjoy the older, long-oil type of lane conditions.

**Q: What was the most memorable event in your career?**

A: There are five events that come to mind. My first 300 game in 1958. Being graduated from the Sage Bowling Club in

1978. Winning the City Doubles Championship in which my son, Bob Jr., had bowled in the same division as me and I had the chance to see my son bowl so well. Winning the Adult Child Championship with my other son, Brian, and being honored with the induction into the Mercer County Hall of Fame.

**Q: Is there some advice you would like to give to your fellow bowlers?**

A: Yes, I would like to say that if you compete in any sport, or as you go through life, you should treat the game and the people the way you would like to be treated. ♦

## TRANSITIONS

The HOTLINE offers congratulations to the following employees:

**Mike Anderson** of TFTR Operations and his wife, Anne-Marie, whose daughter, Kaitlyn Marie, was born September 1.

**Ned Arnold** of the Computer Division and his wife, Melinda, whose daughter, Lindsay Grace, was born August 24.

**Noreen Crusier** of the Accounting and Financial Controls Division and Douglas Solly of the Mason Shop on Main Campus who were married August 6.

**Fred Simmonds, Jr.**, in the Vacuum Shop and his wife, Joanne, whose son, Shaun Russell, was born August 19.

**Patricia Stephens** of Information and Administrative Services and Earl Buggs who were married August 14 in Las Vegas. ♦

## Colloquium Series begins on September 28

The 1988-1989 professional colloquium series begins on September 28. This year's Co-Chairpersons are C. Karney, C. Staloff, and B. Stratton. They would welcome suggestions for speakers from the professional staffs and also information as to when possible speakers from

distant institutions are expected to be in the Princeton area.

The colloquia are held each Wednesday from September to June at 4:15 p.m. in the MBG Auditorium, unless otherwise noted. Speakers for September and October are given below:

**September 28** — "A Steady-State Tokamak Experiment," by Peter Politzer, GA Technologies Inc., San Diego, California.

**October 5** — "Traveling-Wave States in Convecting Fluids," by C.M. Surko, AT&T Bell Labs, Murray Hill, New Jersey.

**October 12** — "How Accurately can Chaotic Trajectories be Computed?" by Jim Yorke, Mathematics Department, University of Maryland, College Park, Maryland.

**October 19** — "Millisecond Pulsars," by Joe Taylor, Physics Department, Princeton University, Princeton, New Jersey.

**October 26** — "Recent Developments in Cosmology," by Jim Peebles, Physics Department, Princeton University, Princeton, New Jersey. ♦



## Computer Corner

### Passwords and Computer Security

A hacker recently used a computer at the Jet Propulsion Laboratory (JPL) to access a Navy computer. The hacker was

able to enter the JPL computer because "someone violated the rules" governing the selection of passwords. The intruder discovered the users' names by reading a network directory, then correctly guessed a password to be a particular user's name.

At PPPL, the policy for passwords is as follows:

- All mainframe login accounts are password protected.
- Passwords must be at least 6 characters long.
- Passwords must not be proper names (i.e., your name, the name of a relative or a pet), birthdays, social security numbers, telephone numbers, etc.
- Passwords must be changed at least annually.
- Accounts with systems privileges must have computer-generated passwords.

Each user is responsible for the integrity of his or her password. If a user suspects that an account has been compromised, the password should be changed immediately, and the incident reported to the Computer Protection Plan Manager, Dori Barnes, ext. 2557.

Please comply with the PPPL policies on passwords, so that incidents such as the one described above do not occur at PPPL. ♦

**In Focus  
is One Year Old  
in October.**

**HAPPY BIRTHDAY!**



The Forrestal Division of Princeton University's Public Safety Department provides the **HOTLINE** with safety tips for at home and at work. Below is some information that may help you when selecting a babysitter.

Finding a reliable, caring, and competent babysitter can be critical to your child's safety and well-being and to your peace of mind. Your part as a parent is also important. A few minutes to talk about safety helps the sitter to do the best job he or she can.

### Finding a Sitter

Ask neighbors and friends, especially those with children similar in age to yours, to recommend a sitter. Personal referrals are the best route. Contact your local high school guidance counselor and ask for suggestions and recommendations. Put an ad in your community paper, religious organization's newsletter, community bulletin board, or an employee newsletter at work.

### Interviewing Potential Sitters

Once you have found a few interested candidates, interview them. Ask for references and check them. Be selective, remember that whoever you choose will be responsible for your children. Ask questions such as: How long have you been babysitting? What experience do you have with children this age? What activities do you enjoy doing with children? Are you willing to share your hobbies and interests with children? How would you set limits for and discipline children this age? What are your hourly rates and minimum fees?

### Once You Have Chosen a Sitter

Have the sitter over for a visit. This will give the children and the sitter a chance to become acquainted and will help familiarize the sitter with your home, routines, and pets. The first couple of sitting jobs should be of short durations so the children and sitter can become acquainted.

### Before You Leave the House

Leave a list of important numbers and emergency information near every phone, including where you can be reached. An example of such a checklist that contains this information is given below.

Advise a neighbor that you will be away and give his/her number as a primary contact for the sitter. Tell the sitter when you expect to be back. Be prompt and in good condition to get the sitter home safely. Go over, with your children and the sitter, the routine for the time you'll be gone. Tell them what they can eat for meals and snacks, where they can play, what the rules are about TV and bedtime. Do a safety check. Point out the emergency exits, smoke alarms, and fire extinguishers. Emphasize that if there's a fire the babysitter should immediately get everybody out of the house and call the fire department from a neighbor's house. Demonstrate the door and window locks. Leave a key if the sitter plans to take the children out.

### Protect Your Family

If it's a new sitter call home at least once while you're out to make sure everything is all right. Listen to your children. If they complain whenever you tell them that a certain sitter is coming over, try to find out why. If there is a problem, find another sitter. Take time to discuss any problems or concerns with your sitter.

Sometimes, no matter how careful you have been, the sitter is unsatisfactory. Firing can be difficult, but remember that you have a business arrangement and your children's welfare is at stake. Act in your children's best interests. ✪

### Babysitting Safety Checklist

Address and Phone Here: \_\_\_\_\_

Where Parents will be: \_\_\_\_\_

Emergency Friend or Relative: \_\_\_\_\_

Child(ren)'s Doctor: \_\_\_\_\_

Allergies: \_\_\_\_\_

Medications: \_\_\_\_\_

Night Light? \_\_\_\_\_

Special Instructions or Routine to Follow: \_\_\_\_\_

Police: \_\_\_\_\_

Fire Department: \_\_\_\_\_

Rescue Squad: \_\_\_\_\_

Poison Control Center: \_\_\_\_\_

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