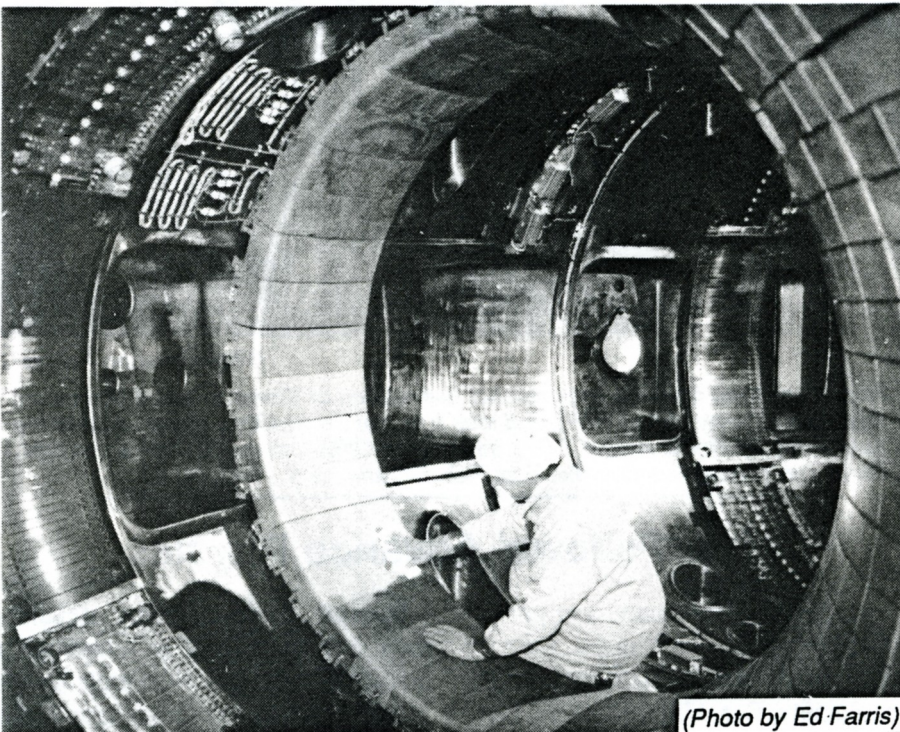


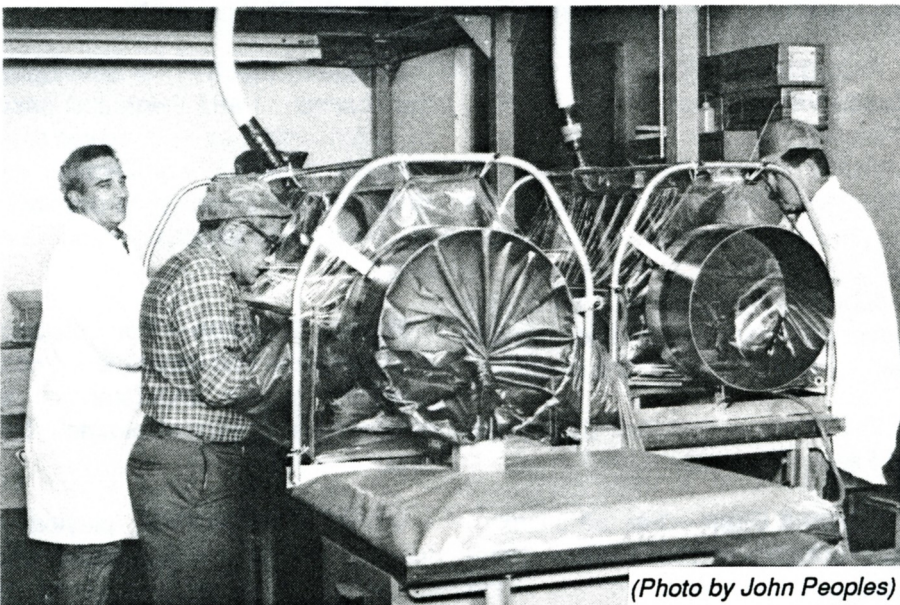
TFTR—The Inside Story

by Phyllis Rieger



(Photo by Ed Farris)

George Barnes of the Engineering Department, dressed in anticontamination clothing, works on the radio-frequency bumper limiter inside the TFTR.



(Photo by John Peoples)

TFTR team technicians (from left to right) Joe Bonfonti, Bob Kneeshaw, and Ed Semeta sand clean the bumper limiter tiles removed from inside the TFTR vessel.

An ending often marks a beginning. When the Tokamak Fusion Test Reactor (TFTR) completed its run on July 6, it meant July 7 would begin an extraordinarily busy period for many physicists, engineers, and technicians, including those responsible for work inside the TFTR's vacuum vessel.

Experimental physicist Kingston Owens and George Barnes and vacuum shop welder Steve Landau of the Engineering Department are three members of the TFTR team consisting of 66 TFTR Lab & Shop technicians, operations personnel, and physicists who over the last six months have inspected, cleaned, and installed many components inside the TFTR vessel. Essentially all of the Tokamak Operations technicians worked in the vessel during the opening in order to minimize an individual's radiation exposure.

Before a person can work inside the vessel, he/she has to suit up in anti-contamination clothing which includes wearing a special suit, two pairs of gloves, and shoe and head covering, all sealed at the openings with duct tape. The special clothing is necessary both to keep the vessel free of foreign materials and prevent the spread of tritium contaminated carbon dust. The Health Physics Branch provided training and monitoring to insure safe handling of radioactive materials.

It takes several minutes just to prepare a person to enter the vessel. The most time a person spends working inside is about four hours per day.

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Although most people can stand at full height inside the vessel, working in a poorly lit, confining space takes a great deal of effort, time, and patience, especially when the vessel's work platform has been removed.

The vessel crew completed several tasks during the vessel's opening including installation of two rf (radio-frequency) antennae; one built at PPPL and the other built at Oak Ridge, Tennessee. The team also helped to remove most of the 2,000 bumper limiter tiles. The tiles were sanded clean and replaced.

Additionally, the 36 surface pumping panels were removed, rebuilt and then placed back in the vessel. Also, during the vessel's opening some new diagnostics were installed which will measure various performance processes of the TFTR.

The vacuum vessel has now been closed for the new run which should begin in April. The cooperative efforts of Tokamak Operations, the Engineering Department, and the Health Physics Branch of this TFTR team have shown that people of different skills working closely together can accomplish much and contribute to the overall goal of achieving successful experimental results during the TFTR's next phase. ○

PPPL Recognized by United Way

The Princeton Area United Way, at its Annual Meeting, presented the Laboratory with its "Golden Award" in recognition of its outstanding performance in the 1987 fund raising drive. As a result, we have now affixed a 1987 gold bar to the United Way Award Plaque, located on a wall in the LOB Lobby, where it joins the gold bars for the two previous years — 1985 and 1986. Three years in a row!



(Photo by John Peoples)

Representatives from the International Association of Campus Law Enforcement Agencies recently visited PPPL and took a tour of the facilities. Shown around the Laboratory by Phyllis Rieger, PPPL Information Officer, they are, from left to right, Doug Tuttle, Gary Summerville, Tom Rahmer, and Larry Thorton. ○

Five 'Fellows' Advance Physics

Ingenuity, imagination, and persistence helped five PPPL physicists gain recognition from The American Physical Society. Drs. Manfred Bitter, Morrell Chance, Nathaniel Fisch, Robert Goldston, and Daniel Jassby did it the old-fashioned way—they earned it.

According to W.W. Havens, Jr., Executive Secretary of the Society, "Annually, we honor a few of our outstanding members by electing them to the status of Fellowship. We designate only those members who have contributed to the advancement of physics by independent, original research, or who have rendered some other special service to the causes of the sciences."

The honorees and their Certificates of Fellowship read:

Manfred Bitter—"For the development of high resolution X-ray spectroscopy and the measurements of ion temperature and plasma rotation on tokamaks."

Morrell Chance—"For development and application of fundamental analytical and numerical tools for the investigation of the magnetohydrodynamic stability of high beta plasma in shaped tokamak configurations, including the PBX device."

Nathaniel Fisch—"For developing the conceptual and theoretical basis by which radio frequency waves drive currents in toroidal confinement devices, thereby creating the possibility of steady-state tokamak fusion reactors."

Robert Goldston—"For outstanding theoretical and experimental contributions to the understanding of transport and heating of tokamak plasmas."

Daniel Jassby—"For playing a leading role on conceptualizing and developing the ideas which form the basis for present experiments (TFTR) and future reactors (hybrids)." ○

Anchor Earns Professional License

Charles Anchor of the Electronic and Electrical Engineering Division, Engineering Department, recently earned a Professional Engineering License for the State of New Jersey.

To qualify for the license, Chuck had to pass the National Engineering Examination administered by the State of New Jersey. The test, which takes two days to complete, is comprised of three sections: a small section on the legal aspects and responsibilities connected with the license; a section on the basics of engineering; and a section on the engineer's area of specialization, such as mechanical, electrical, civil, etc. engineering. Because New Jersey uses the National Engineering Examination there is reciprocity between New Jersey and many other states.

Chuck received his license for electrical engineering. A PPPL employee for eight years, he is involved in maintaining the power supplies used in the daily operations at C-Site. ○



(Photo by Ed Farris)

Charles Anchor

Sports Update

Tennis

Contributed by Marilee Thompson

The 11th Annual M.B. Gottlieb Trophy tennis tournament attracted 20 hopefuls last September. Hiro Takahashi won the main draw, with Jim Bialek the runner up. Tom Carroll won the consolation side.

The Perseverance Award went to Bill Blanchard for the second year in a row with another three-hour, shoe-killing, first-round match. Doug

McCune won the Most Interesting Comment in the Heat of the Match Award with "Arnie, how did you do that—the ball changed spin as it went over the net!"

The spring Mixed-Up Doubles Open will be scheduled for early June. Watch the bulletin boards for more information or call Marilee Thompson, ext. 3422.



(Photo by John Peoples)

Tom Carroll (left), Hiro Takahashi (center), and Jim Bialek (right) were all winners in the 11th Annual M.B. Gottlieb Trophy Tennis Tournament.

Softball

Contributed by George Levitsky

Unbeknownst to many at the Laboratory, PPPL has for years fielded softball teams in the Princeton area Business League. The PPPL A team traces its origins back to the old accelerator days, when it was a force to contended with. The PPPL B team evolved, over the past five years, from the now defunct intramural program.

For the PPPL B team, legitimacy and

self-respect has had to be earned the hard way. From the early futile flailing and winless seasons, a core group of players has persevered and matured into a team that can now hold its own in serious competition and has embarked on its own winning tradition.

Emerging from the difficult formative seasons under the enthusiastic guidance of, first, Carl Bunting and then

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Jerry Williams, the team began to show its winning potential in 1986 under Tony Bleach. In 1987, under the joint management of Jules Nemeth and George Levitsky, the team's goal was to achieve a 500 season. And, this goal was more than realized with a season record of 14 wins and 6 losses — only three games out of first place!

This improvement is due to several factors other than ruthless management techniques: The pitching staff including Dave Gayley and Jack Bartow matured into what was possibly the best in the league and the acquisition of Bob Mayo at shortstop gelled the infield into a cohesive unit.

During 1987, another missing element appear — the offense. The team's batting average was well above 500. Total output was 334 hits and 251

runs in twenty regular season games, an all time high. Tony Bleach and Bob Mayo lead the team in finesse and accuracy (best averages) and Andy Vanisko had the most hits, home runs, and runs batted in (RBIs).

The PPPL B team features players from all areas of the Laboratory: warehouse, theoretical division, emergency services, engineering, physical plant, accounting and finance, safety, and experimental operations. PPPL softball participation is open to all employees (men and women), contractor personnel, and graduate students working at the Laboratory. The season lasts from mid-April to August.

The team is always looking for new talent. Come out, try out! For more information call George Levitsky, ext. 2797, or Colin McFarlane, ext. 2851. ○



(Photo by Charles Kahil)

Members of the 1987 PPPL B softball team are front row, left to right, Charles Kahil, Frank Wasiowicz, Mat Lawson, Jack Bartow, Tom Holoman, Joe Greco, and Bob Mayo. Back row, left to right, are Gary Hill, Jose Aquino, Tony Bleach, Dave Gayley, John Luckie, Jules Nemeth, Andy Vanisko, Rich Meagher, and George Levitsky. Not show are Jerry Siminoff, Jerry Gilbert, Steve Raftopoulos and Buddy Kearns.

100 Best on Display

Springtime at PPPL will begin with a display of the USDOE Laboratories' contributions to 100 of the most significant new technical products of 1987. The exhibit will appear in the LOB lobby starting March 21. This includes the Soft X-Ray Laser developed by PPPL's own Dr. Szymon Suckewer.

The exhibit, comprised of individual

subject panels, will run until April 15. Annually "Research and Development" Magazine recognizes laboratories responsible for the 100 most significant technical products of the year. This past year marked the Magazine's 25th anniversary of awards honoring notable achievements.

All employees are invited to view the

exhibit which has already traveled to various laboratories and museums including the Chicago Museum of Science and Industry. ○

Stress Seminar

Family Services of Princeton will present an hour-long seminar on "Stress Management" on Tuesday, April 12 from 12:00 to 1:00 p.m. in the TFTR Conference Room, B318, C-Site. A memo with a return coupon will be sent to all employees during the last week in March giving further details. While this seminar is open to all employees, the presenter has requested that each session be limited to twenty-five attendees, therefore, only the first twenty-five respondents will be accepted to attend this initial seminar. Additional seminars will be scheduled as needed.



Chiu-Tze Lin, Winner of the Artists International's Fifteenth Annual Young Musicians Auditions Piano Award, will perform a piano concert at the Carnegie Recital Hall on Saturday, March 26, 1988, at 5:30 p.m. Ms. Lin, wife of Bob Kaita, a physicist on PBX-M, has also been a winner in the Steinway Piano Competition, the Portland Symphony Competition, the International Young Keyboard Artists Competition, and the Union League Scholarship Competition. Tickets are \$9.00 each. Contact Bob, S202, C-Site, ext. 3275 for tickets or program information. ○