

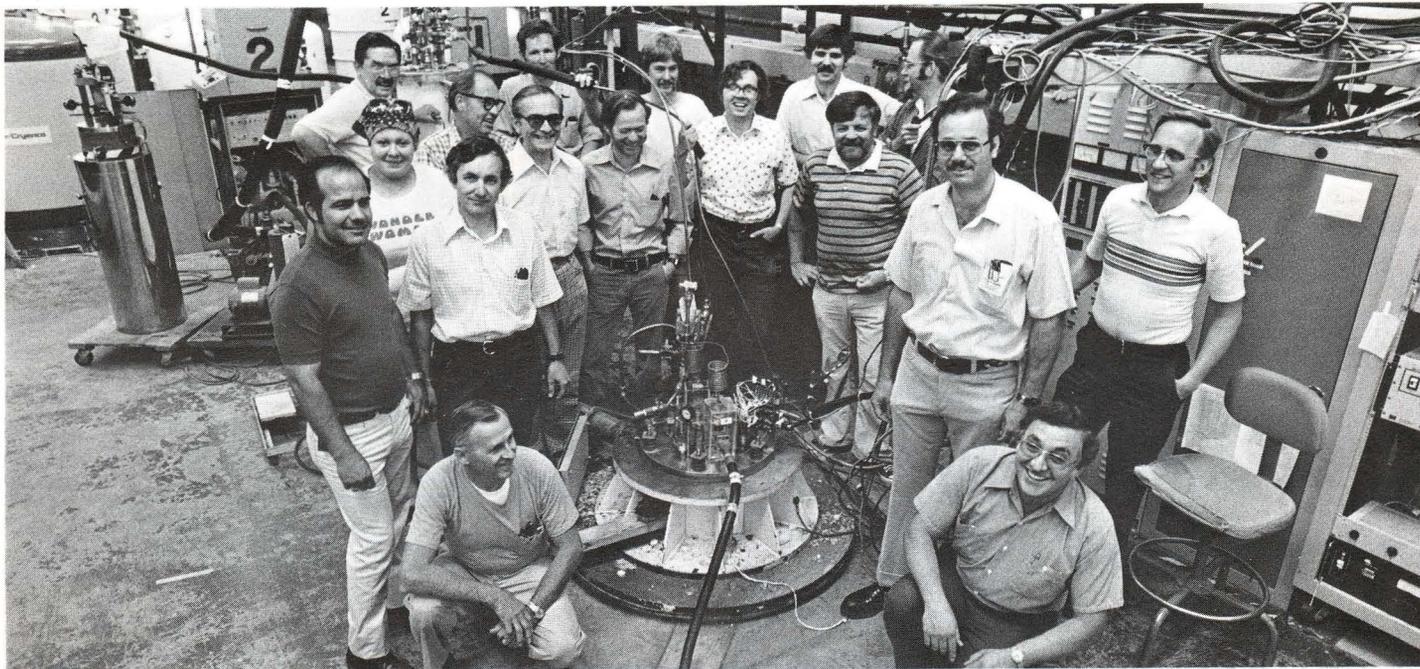
# FERMILAB NEWS

 Fermi National Accelerator Laboratory

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July 27, 1978



...Proton Milestone Portrait. Kneeling: S. Tonkin (L), E. Ramirez; Second Row L-R: J. Guerra, A. Skraboly, J. Satti, L. Kula; Third Row L-R: G. Smyly, W. Ewer, L. Sawicki, F. Browning, P. Garbincius, L. Robinson; Back Row L-R: W. Noe, Sr., J. Kolvin, T. Dillman, B. Cox, P. Mazur...

## SUPERCONDUCTING MAGNET SUCCEEDS

After a year of hard work, success! Celebrating are Fermilab's Proton Department and Research Services people.

They have been developing large-aperture, low-current superconducting magnets. Brad Cox, project leader reports that the first dipole magnet coil was successfully tested during the first week in June. It will be used in the P-West High Intensity Laboratory. Development of the low current coils, Cox said, will permit the Proton experimental area to eventually utilize 1,000 GeV beam.

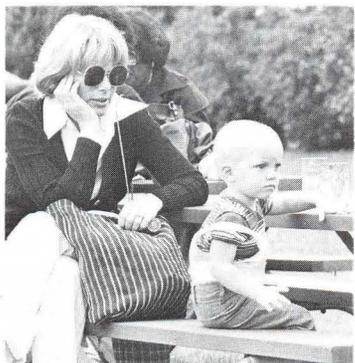
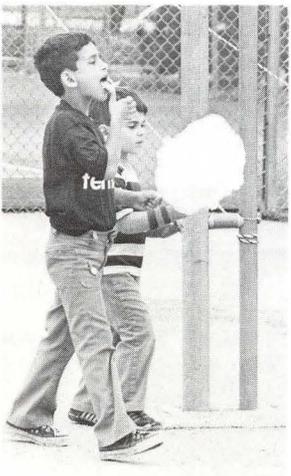
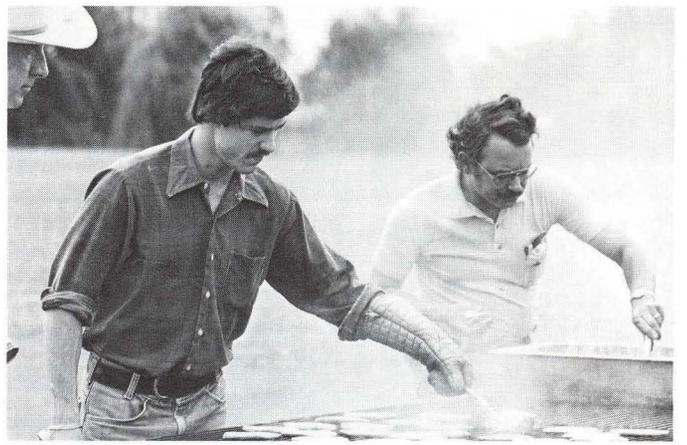
According to Cox, the magnets provide approximately 2.5 times the bending and focusing power of conventional magnets. They differ significantly from superconducting accelerator magnets. The low operating current ( $\sim 250$  amps) both lowers refrigeration load (because of smaller lead losses)

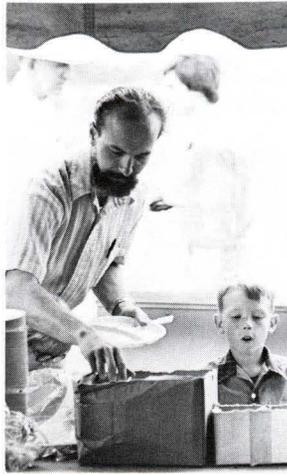
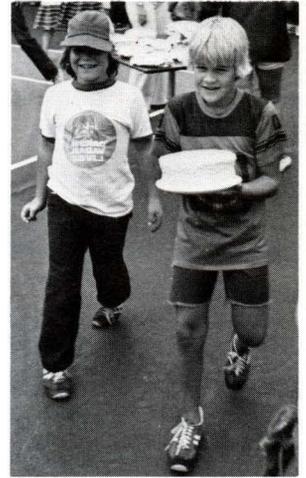
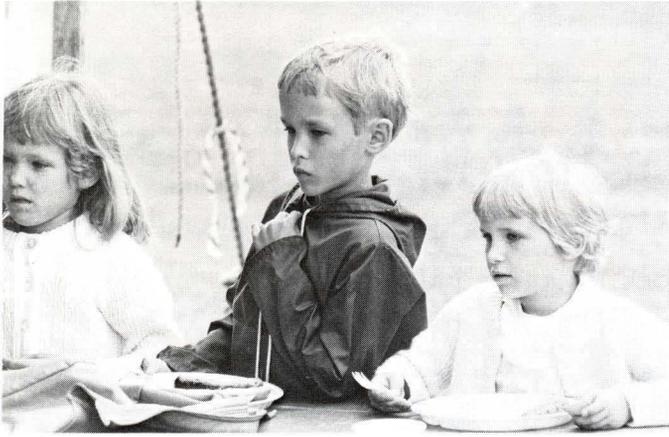
and permits use of existing bus work in the experimental area. Also, the large bore ( $\sim 6''$ ) allow transport of very high intensity secondary beams.

Physicists Peter Garbincius and Peter Mazur, with John Satti, the project engineer, played the major roles in the design and testing of the dipole magnet. This dipole coil, the latest in a series built by Proton technicians under the direction of Satti, was successfully tested and trained to the desired field of 43 kilogauss in approximately 25 quenches. During this process, auxiliary equipment designed to extract the stored energy of the magnets was also tested.

Engineering for the magnet project was contributed by Lou Kula, Tom Dillman, Art Skraboly, Ed Tilles and Fred Browning of the Proton Department.

(Continued on Page 4)





'78 EMPLOYEE PICNIC ALBUM  
It was softball, hotdogs, games and rides for about 1,300 persons attending NALREC's all-Laboratory picnic last Sunday. Co-chairmen B. Schluchter and R. Ovitt thanked the 75 volunteers who worked at the event and made it a success . . . and we salute the co-chairmen for their leadership. (FERMINES photos by Fermilab Photo Unit.)



Inter/National Film Society Presents

"THE HELLSTROM CHRONICLE"

Friday, July 28

8 P.M.

Fermilab Auditorium

With the drama of science fiction, "The Hellstrom Chronicle" is a documented, factual account of man's most challenging rival--the insect. The David L. Wolper production (1971) won the Academy Award for best documentary and Grand Prix de Technique at the Cannes Film Festival. Newsweek Magazine called the film "Brilliant and disturbing. Incredibly beautiful, a visual and aural feast." Color, 90 minutes. Rated G. Admission: Adults, \$1.50; children, 50¢

SKIN/SCUBA DIVING COURSE OFFERED

Applications are being accepted for a YMCA-approved skin and scuba diving course to be conducted at the Fermilab pool.

Bruce Strauss (Energy Doubler) is the instructor. He has been certified by the YMCA to teach the class. The course will meet Aug. 14-25 from 7:30 to 9:30 a.m. Assisting Strauss will be Brian Murphy (Energy Doubler), a certified diver.

Strauss said the class will be limited to 15 persons over 15 years of age. Students 12 to 15 years old may be accepted if a relative over 15 takes the course concurrently.

Cost of the class will be about \$35 per person. Included will be the use of all scuba equipment. Students must supply their own mask, fins and snorkle.

"Successful completion of the class," Strauss said, "will insure that students have the basic knowledge to handle themselves safely while using scuba equipment. A certification card recognized worldwide will be given to course graduates."

The course will comprise about 15 hours of pool instruction and 10 hours of classroom work. Basic diving theory and safety will be taught using lectures, U.S. Navy films and pool practice.

Prospective students must be able to swim 300 yards in any stroke, tread water for 15 minutes and submit a medical approval. Two open water checkout dives are required using a full wet suit.

To sign up or for more information, contact Helen Ecker at CL-1W/Ext. 3126.

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NOTICE

The Users' Center will be closed Friday, July 28, 1978 because of a special event sponsored by our foreign visitors.

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SUPERCONDUCTING MAGNET (Cont. from Page 1)

Another group of Proton Department people assembled the magnet: Lead technician Jesse Guerra, assisted by Ernie Ramirez, Larry Robinson, Len Sawicki, Jerri Smyly, and Stan Tonkin. J. Fitzgerald of the Proton Department provided power supply expertise for the tests. Stan Snowden made field and stress calculation for this magnet.

The complex development project also required other services. Morris Binkley, Head of the Lab 6 Liquefaction Facility, along with Bob Bennett, Buzz Rodewalt, and Jack Rossetto, provided liquid helium for the testing of the coil. Special aid came from other Instrumentation, Electrical and Cryogenics Groups of the Proton Department.

The magnet development program will now proceed to assembling the coil in a cryostat, -- a special "vacuum bottle." Then, an iron yoke outer casing will be added to make a completed dipole ready for installation in the beam line. The accompanying auxiliary systems have been designed and are being built, Cox said. A finished magnet is expected by the end of the summer.

A counterpart to the dipole, the first quadrupole magnet coil is being wound by Research Services personnel while dipoles are underway. Ron Fast is in charge with Wes Craddock, Lee Mapalo and Eddie Leung responsible for the engineering and design and Steve Anderson, Roger Deneen and Chuck Grozis assisting.

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