

# The Village Crier



fermi national accelerator laboratory

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## SUCCESS! PROTOTYPE MAGNET PASSES TEST

Progress in the research involved in building the Energy Doubler/Saver accelerator at Fermilab took another step forward recently. A successful test was carried out on the first prototype quadrupole magnet for the new ring. The project followed about six months' effort by "the quadrupole team".

In the present design, the Doubler/Saver would consist of 240 of these quadrupoles (together with 800 dipoles). The new ring would be installed in the existing tunnel, directly below the magnets of the main accelerator. The quadrupole magnets focus the proton beam so that it will travel in the center of the 2" x 4" vacuum tube as it races around the four-mile ring about 47,000 times a second.

Previous tests in the Doubler/Saver development reported in THE VILLAGE CRIER have involved the dipole magnets which bend the beam into its circular path. Both types of magnets are necessary, as is the case in the present accelerator.

Design work for the quadrupole magnet was led by Norman Engler of Engineering Services. The fabrication team was led by Don Smith of the Magnet Facility. George Kalbfleish of the Energy Doubler group is in charge of the program, and John O'Meara of Engineering Services is the project engineer.

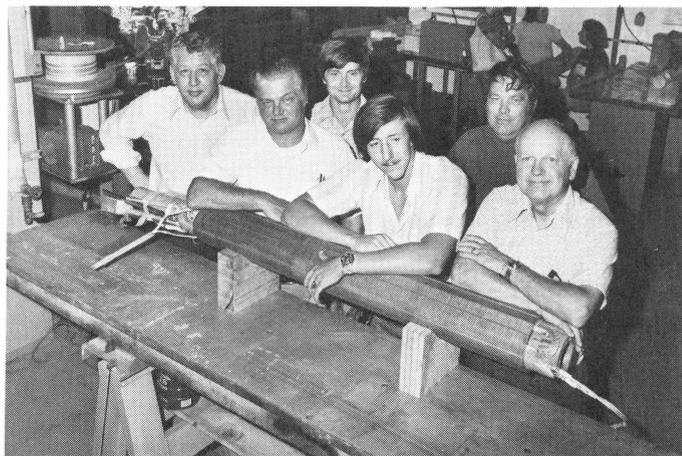
O'Meara comments on the test, "Our objective was to build a precision quadrupole using precision rigid coils that maintain their position under magnetic loading. We feel that this objective was met, a design gradient of 25 kilogauss/inch was reached. In doing this, the quad ran at 98% of the maximum theoretical current that the conductor can carry -- commonly referred to as 98% of short sample. These preliminary tests indicated that the field quality is excellent, however further tests using more precise coils will be conducted during July."

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...Right Photo, Magnet facility crew L-R: C. Bowling, A. Ruffins (kneeling), R. Barnhill, L. Dangleis, S. Faulhaber, D. Smith (rear), D. Fisher, J. McBride, D. Truong, M. Frett (rear). Not shown: G. Harris, J. Kiehn,



... G. Kalbfleish (L) and J. O'Meara beam about successful magnet test...



...Engr. Servs. Design Group L-R: N. Avgerenos, R. Roth, A. Oleck, W. Robotham, N. Engler, R. Jornd. Not shown: H. Barber, J. Winterkamp...



## "SPRING PLANTING" IN SUMMER

Fermilab's annual prairie seed planting--a project to restore 660 acres with wild grasses and flowers--achieved a milestone recently.

A record 40 acres were seeded June 16-17 in a third annual planting. Nine acres were planted last year and eight in 1975. Four volunteers working were: Tony Donaldson, Accelerator Division engineer, and chairman of Fermilab's Prairie Restoration Committee; Richard Kujath, farm crew member; John Sandberg, son of Burt Sanberg (Accelerator); and Dr. Robert F. Betz, professor of biology, Northeastern Illinois University and one of the originators of the project.

According to Dr. Betz, about 450 pounds of seeds from about 30 varieties of prairie grass and 24 wildflowers were sowed.

Main varieties of seeds set in the ground were Indian grass, big and little blue-stem, switch grass, purple prairie clover, compass plant, purple dock, Indian quinine, and purple and yellow cone flower.

A special tractor-drawn planting machine--a Nisbet Seed Drill--was loaned by Morton Arboretum. The machine enabled planters to fill 10 furrows simultaneously.

The seeds had been collected at Morton Arboretum, Lisle, at the Gensberg-Markham (Ill.) prairie and other plots, in October by 150 volunteers. After winter storage of the seeds, volunteers were again enlisted in February to clean and stratify the grain, removing stems, sticks, stones and other debris at an all-day "seed-cleaning bee" in the Kuhn barn. Kernels were then bagged, dampened and refrigerated until "spring" planting. Preceding the planting was an April controlled burnoff of previously planted areas and plowing of areas to be seeded to eliminate weeds.

Another project milestone is in the making, Betz said. For the first time, plans are to harvest seeds from the Fermilab plot--by hand--this fall. Also, volunteers will again collect kernels at the arboretum and Markham. This summer, a combine is being adapted so that seeds may be mechanically harvested in the fall of 1978. Tentatively, a fall planting will also follow an autumn seed harvest Betz said.

According to Betz, an estimated 100 pounds of seed per acre may be gleaned mechanically. "This will enable us to plant 100 acres at a crack," Betz said. He added that as the Fermilab plot becomes more self-sustaining volunteers will be tapped to collect more exotic species of plants.

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...H. Groskinsky...



...T. Kelly...

### LENSMEN FOCUS ON FERMILAB

Two visiting photographers trained their lenses on Fermilab people and facilities recently. On separate assignments were Henry Groskinsky and Tony Kelly. Groskinsky, a former Life Magazine photographer, was on assignment for Fortune Magazine. His photos will accompany a story by Gene Bylinsky and Alicia Moore on big science which will appear in the July (1977) Fortune. Tony Kelly is a freelance photo artist who was on assignment for the U.S. Information Agency's America Illustrated magazine, which circulates exclusively abroad (including the Soviet Union). The Public Information Office gratefully acknowledges cooperation of Fermilab people who participated.

## ACCELERATOR TEAM WINS PRAISE

Prof. A.K. Mann, who heads Experiment #310 in the Neutrino Area, had high praise for the Fermilab accelerator when asked recently about progress on his experiment.

"In 2-1/2 weeks we have received as many protons on the neutrino target as we did in 2-1/2 years of running our previous experiment, #1-A." Mann went on to point out that beam intensity per pulse for use by the experimenters is now a factor of ten better than two years ago, and "besides that, the overall stability of operation is several times better." The E-310 group is studying neutrinos and the weak force involved in neutrino interactions.

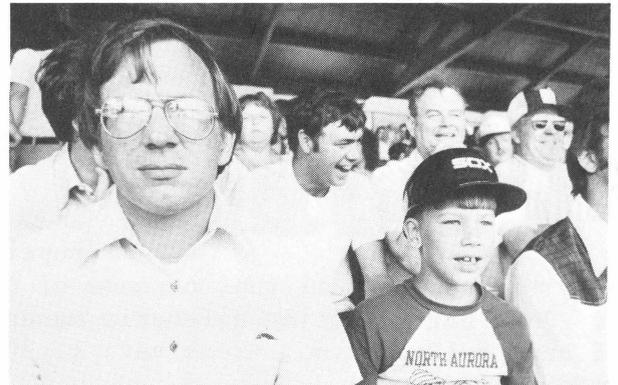
Russ Huson, head of the Accelerator Division, replies, "Yes, it's true that some of the hard work we have been putting into making multitudes of minor improvements to the accelerator over the past few years now seems to be paying off. Naturally, we still have our bad days from time to time, but we are usually able to run for quite reasonable lengths of time with few interruptions."

Russ has been emphasizing to the staff of the Accelerator Division for some time that though there may not be as much excitement in running a whole shift without a break as there is to a sudden dramatic increase in intensity, to an experimenter the uninterrupted running is more important. A sudden interruption of the accelerator running may mean that the experiment will have to repeat or re-evaluate its data.

"The fight for reliability is one in which we must be involved constantly," says Huson. "It is gratifying to have our victories noticed and appreciated by the experimenters."



*...Fermilab fans cheer White Sox...*



*...Chuck Grozis (Res. Services) and son Robert...*

### FUN AT THE BALL GAME

37 Fermilab employees and guests were on hand when the Chicago White Sox whipped the Oakland A's 2-0 June 18. NALREC sponsored a day-before-father's day bus trip to Comiskey Park for several father-son pairs, a father-daughter duo and others. Keith Schuh (Accelerator) handled arrangements.



*...Cindy Gould (Contracts) samples cotton candy...*



*...D. and B. Brown (Meson) with F. and R. Jones (Arch. Ser.)...*

CHARMED PARTICLES' DISPLAY  
ENERGY ON BASEBALL DIAMOND

Introducing the "Charmed Particles," Fermilab's first women's softball team in league play. The 20-woman squad is competing in the Batavia Park District 12-team summer league. The Particles, coached by Sherry Nila (Material Support) and with co-captains Celeste Bottorff (Accelerator) and Kathleen Cooper (Employment), opened a 16-game schedule June 5. As of Sunday (June 26), the team's record was 2-4. After starting with three straight losses, the Particles bounced back to beat Batavia Bank 10-6 and Belden Corp. 12-7 before falling to Kirk Bros. 21-8 Sunday. Upcoming games are: July 12, 6:30 p.m., Geneva High School; July 14, 6:30 p.m., Batavia High School; July 18, 6:30 p.m., BHS; July 21, 6:30 p.m., BHS; July 24, 1 p.m., BHS; July 26, 6:30 p.m., BHS; Aug. 1, 6:30 p.m., BHS; and Aug. 3, 6:30 p.m., BHS. Spectators are welcome. Admission is free. Support your Charmed Particles!



...L-R seated are: C. Morton, L. Sedlacik, P. Perkins, J. Gordon, S. Koteles, P. Molitor, J. Ward, I. Ward. L-R standing are: P. Cooper, D. Cooper, M. Bailey, L. McMath, S. Nila, K. Cooper, C. Bottorff, L. Bottorff. Not shown are: C. Carra, B. Noylan, S. Winfrey...

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**4<sup>th</sup> of JULY**

...AT FERMILAB

Independence Day, Monday, July 4, will be observed as a holiday by the Laboratory. Jo Baaske, payroll supervisor, reminds weekly employees that the regular Monday time sheet mail run, because of the holiday will be made Friday, July 1, at 10:30 a.m. John Barry, acting cafeteria manager, also announced special serving hours. They will be: 8-10:30 a.m., breakfast; 11:30 a.m. - 1:30 p.m., lunch; dinner will not be served.

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FERMILAB SUPERSTARS WANTED

Think you're in shape? An athlete? Maybe even a superstar? Well, here's a chance for Fermilab employees to show their athletic prowess (or lack of it). NALREC will sponsor a "SUPERSTARS" competition, for men and women, on Saturday, July 16, at the Village barn area. Ten events will be staged, contestants must compete in seven to qualify for a trophy. Events planned are: 100-yard dash; pushups; softball throw; football punt, pass and kick; swimming; and basketball freethrow shooting. Others are being considered according to Keith Schuh (Accelerator), SUPERSTARS coordinator. Although event competitions may include men and women, separate point tallies will be recorded for awards. The competition is open to all Fermilab, ERDA, Mutual management and Management Safeguard employees. Registration is underway. To enter (50¢ fee), or for more information, see Keith at C1-14W or phone Ext. 4048/4444.

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FBI MAKES ARREST

Stuart Smith, a laboratory technician in the Fermilab Magnet Facility since October, 1975, was arrested by the Federal Bureau of Investigation on June 22 and charged with theft of government property from the magnet facility. The FBI's investigation led to Smith's arrest and arraignment before a federal magistrate. Smith was released from his employment at Fermilab on Thursday, June 23.