

FERMILAB NEWS

 Fermi National Accelerator Laboratory

Operated by Universities Research Association Inc.
Under Contract with the United States Department of Energy

Vol. 2, No. 17

April 26, 1979

NEW GENERATION OF SUPERCONDUCTING MAGNETS NOW BEING CONSTRUCTED HERE

TA-200 is well on its way to being born.

It is the first in the series of new superconducting magnets that eventually will guide protons around the Energy Doubler ring. This second ring is being constructed directly below the conventional magnets that make up the Main Ring. When linked together, the two rings will push protons to energies as high as one trillion electron volts.

This new generation of superconducting magnets meets more rigorous electrical and magnetic standards, said Will Hanson, head of the superconducting magnet fabrication and engineering department.

What has elated physicists and engineers is that TA-200 is passing stringent tests, particularly a recent vertical dewar test. The magnet was placed in a temporary cryostat and evaluated to determine if it is up to accelerator grade before being installed in its permanent cryostat. (The temporary cryostat sits at an angle of 23° from the horizontal.)

The magnet tests included maximum current capacity, current transfer ratio and ramp rate sensitivity. The team at Lab 5 in the Village, where the tests were held, also conducted two types of motion tests, one using a strain gauge and another using an in-house motion measurement device they call a scissorsometer.

TA-200 soon will be inserted into its permanent cryostat and will then undergo a series of additional tests. Hanson said the magnet assembly facility is continually improving its rate of production and now has reached 2½ magnets a week.

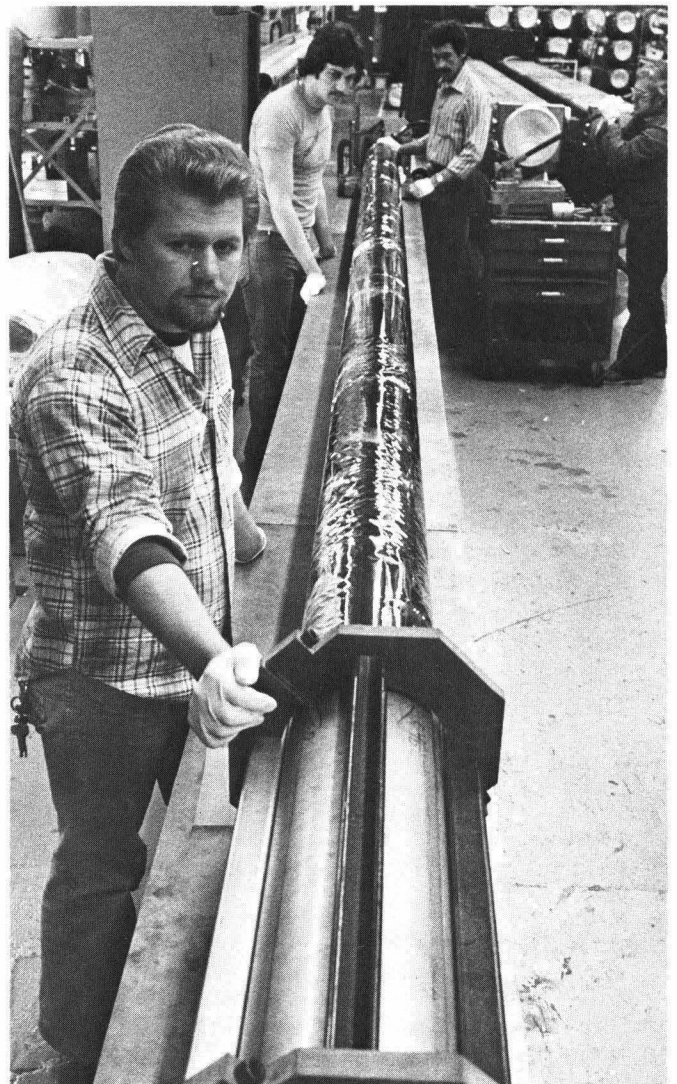
The only significant change in the new magnets is that they are 21 feet long, one foot shorter than their predecessors. This will allow additional correction elements

(Continued on Page 2)

INTERNATIONAL SYMPOSIUM IN HONOR
OF ROBERT R. WILSON.....April 27

1979 ANNUAL FERMILAB
USERS MEETING.....April 28

Central Laboratory Auditorium



...Gently inserting the shielding (shiny unit) into the vacuum assembly are, L-R, Glenn Smith, John Zeilinga, Don Tinsley and Leo Vieu. All are technicians except Tinsley, who is foreman of the cryostat group...



...Showing pride for producing coil assembly for first of new breed of superconducting magnets are, front to rear on left: Will Hanson, head of Superconducting Magnet Fabrication and Engineering Department; Ray Safarik, inspector; Imre Gonczy, foreman of coil winding; Bernie Assell, chief technician; Tom Fritz, pre-assembly; and Chuck Kenney, inspector. Front to rear on right: Dale Sherwin, final assembly; Steve Merkler, final assembly; John Carson, project engineer; and Jim Humbert, chief inspector...

(Continued from Page 1)

and equipment for beam extraction to be more readily accommodated, explained Hanson.

The "T" in TA-200 stands for Tevatron, and the "A" for the present series. The next magnet, which is now being built, will be stamped TA-201.

* * * * *

ASPIRIN PREVENTS HEADACHES IN BOOSTER AND MAIN RING

Normally aspirin is taken after a headache comes along. But not in the Booster and Main Ring.

The physicists and engineers there feed aspirin to their machines to prevent headaches. Honest.

During normal use of an rf cavity, slow internal water leaks may develop. If these are not caught quickly, enough water could build up and cause considerable damage to the cavity. In order to determine when the water buildup needs attention, the Main Ring rf systems people use aspirin.

Each of the 18 radiofrequency cavities in the Main Ring is fed two tablets. They are partly lodged in holes drilled at each end in the flat bottom copper plate. Each tablet holds open a microswitch.

Water dripping through the holes eventually dissolves an aspirin tablet. This allows the microswitch contacts to close, sending an alarm to the main control room. The cavity is turned off and repaired as soon as possible.

"We've made good use of this," said Bill Miller of the Main Ring rf systems. "There have been a number of times we caught what would have become a catastrophic water leak."

A similar headache prevention procedure is followed with the cavities in the Booster.

* * * * *

HOW TO HANDLE TERMINOLOGY TROUBLES

Having trouble understanding some of the terminology used at Fermilab? Help has come.

Patricia Zack, tour director in the Public Information Office, CL-1W, has prepared a list of the most common terms, along with their definitions, heard at Fermilab. The list-containing 41 terms-is available free from her.

It's the same list she sends to teachers to help them prepare their students for tours.

* * * * *



Dr. Norman F. Ramsey ended his term as president of the American Physical Society with a flourish of strong optimism for the future of physics.

The silver-haired former president of Universities Research Association wrote in the April 1979 issue of *Physics Today*: "The physics profession has serious problems...but the subject of physics itself is thriving. Rarely has the subject been more fruitful and exciting than at present."

He also wrote, "Experimental and theoretical physics advances...convince me that physics will continue as a fruitful and rewarding research field for many years to come. The profession of physics may have serious problems, but the science of physics is wonderful."

The article in *Physics Today* is an adaptation of his address as the retiring president of the APS delivered at a joint meeting of the APS and the American Association of Physics Teachers.

In his report, Ramsey said, "Fortunately for physicists, it is also becoming increasingly apparent that many of the major problems facing our country--production of useful energy, energy conservation, energy transmission, environmental problems, transportation, communications and so on--require major scientific and technical innovations of the kind to which physicists can contribute importantly."

Overall in his report, Ramsey assesses the major accomplishments of physics in the past year, admitting the list is long and that he is limiting it to his personal favorites. Among his favorites "is that obtained by Dr. Leon Lederman and his associates at Fermilab showing the discovery of ν including the confirming results from DESY (DORIS)." Ramsey called this not only "a great discovery" but also demonstrates "how the work of two different laboratories can complement each other."

In other parts of his report, Ramsey looks at the major problems the physics community faced in the past year and those that it is likely to encounter in the coming years.

* * * * *



Fermilab's popular and affable building manager, Gene Plant, will retire April 30.

He and his wife, Dorothy, then will head to Big Coppitt Island, about 160 miles south of Miami in Key West, Fla., where they will settle down and begin a new episode of Plant's career. Plant himself plans to continue his active life, possibly by obtaining a job as a maitre d'.

He "fell in love with the vicinity" when he visited his son there and decided that's where he wanted to live after he retired.

Plant joined Fermilab in August 1971, served as coordinator of janitorial services and trash removal, and two years ago was promoted to building manager.

His hobbies are fishing, tennis and billiards. As he leaves he realizes one of his ambitions: "to retire being the oilliard site champion."

* * * * *

NEW RESTAURANT OPENS IN VILLAGE

It's called Chez Leon, a new restaurant with a distinctive menu.

Named after Dr. Leon M. Lederman, Fermilab's director designate who was one of the main forces in establishing the Users Center in the Village, the restaurant is in the Users Center. It serves lunch on Wednesday at 12:30 p.m. and dinners on Tuesday and Thursday at 7 p.m. The price for a lunch will be \$3.50 and for a dinner \$6. A wine list is available, with drinks costing an additional amount.

Reservations are encouraged and may be made by calling Helen McCulloch in the Central Laboratory at Ext. 3126 and Sue Morchi, after 4 p.m., in the Users Center at Ext. 3524.

Tita Jensen, the talented chef and wife of Fermilab physicist Hans Jensen, said the menus will be distinctive and not likely to be found elsewhere in the area.

* * * * *

...And (R) yet another sign of Spring emerges at Fermilab. By this time next month, buffalo herdsman Vic Kerkman expects possibly 15 calves. The dotting mothers meticulously care for their young...



MEETING OF Z-80 MICROPROCESSOR USERS

Users of Z-80 microprocessors will have the opportunity to meet one another and exchange ideas May 4.

The meeting will be held at noon in conference room CL-1W. Participants also can eat their lunches at this time. Organizers of the meeting said many persons at the Laboratory use the Z-80 microprocessor either in their work or in their home systems.

The meeting is expected to yield information about the number of persons who are interested and the degree of that interest. Organizers believe the initial meeting will help them determine if future meetings are feasible and whether interest "extends beyond the ubiquitous Z-2 systems to the many special applications that have been made in controllers, interfaces and many others."

* * * * *

NALREC SPRING AFFAIR OUTSIDE THE INSIDE

With the mighty winter now a memory, NALREC has put together an outside-inside program they are calling "A Spring Affair."

It comes together May 2 at the Village Barn from 5:15 to 9 p.m. Persons can enjoy barbecue beef on a bun with baked potatoes served for \$1.50 outside the barn, then move inside the barn for disco dancing.

* * * * *

SPECIAL NOTICE ABOUT MEALS AND PARKING DURING WILSON SYMPOSIUM

Friday, April 27

Lunch meal: 11 a.m. to 12:30 p.m.

Evening meal: Closed

Because of the Wilson Symposium, employees, visitors and guests are encouraged to eat lunch early April 27 and to notice that dinner will not be served that day.

Spaces for 400 cars on the west side of the Central Laboratory will be reserved for symposium participants. Fermilab employees and users are requested to plan to park elsewhere that day.

NALWO INTERNATIONAL CABARET AND DANCE

NALWO will hold an international cabaret and dance May 12.

It will begin at 7 p.m. in the Village Barn and will feature a buffet dinner with foreign foods. Performing during the meal will be Polley Cosgrove, a flamenco dancer who studied under world-famous Jose Greco. She is the daughter of David F. Cosgrove, a mechanical engineer with the Booster Accelerator. Ayfer Atac, employed at Fermilab in the Colliding Detector Facility, will belly dance.

Following the meal, participants can dance to recorded music. Tickets at \$7.50 each are available at the Guest Office, C1-1W.

* * * * *