

FERMINEWS

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FIRST SUPERCONDUCTING SPOOL PIECE JOINS RANKS OF FERMILAB SUCCESSES

Fermilab has manufactured and successfully tested its first superconducting spool piece.

Given the humble name of "001," it is the first of approximately 250 that will be assembled and tested here and then eventually go into the Main Ring as critical components of the new superconducting accelerator. This first spool piece is headed for B12 (the Awning on the Main Ring Road) for testing under conditions that simulate the superconducting accelerator. It will be hooked up to superconducting dipole and quadrupole magnets, cooled along with them to liquid helium temperature and put through the rigorous evaluation that can only be done above ground at B12, where a segment of the Energy-Saver accelerator is being put through its paces. (See the article about B12 in the Jan. 2 issue of FERMINEWS.)

The spool piece contains components that are essential to the operation of the superconducting accelerator. That all of them could have been fitted into such a compact package is impressive. The spool services include single phase relief, two phase relief, shield relief, vacuum relief, vacuum pump-out, thermocouple flange, single phase thermometers, voltage taps, vacuum break, safety leads, beam vacuum sniffer, sniffer instrumentation, correction element power leads and correction coils.

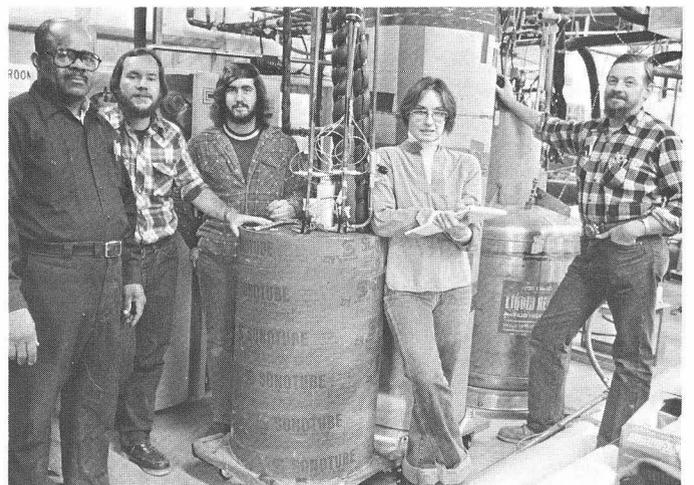
Production of this first spool piece is a tribute to a spirited cooperative venture between experts from the conventional and superconducting magnet facilities, Research Services (of the Research Division) and the Central Helium Liquefaction Facility. They put their best effort together and came up with a remarkable spool piece.

The photographs on this and the next two pages show some of the people who have been responsible for the first spool piece and some of the steps in its manufacture. The correction coils are wound, assembled

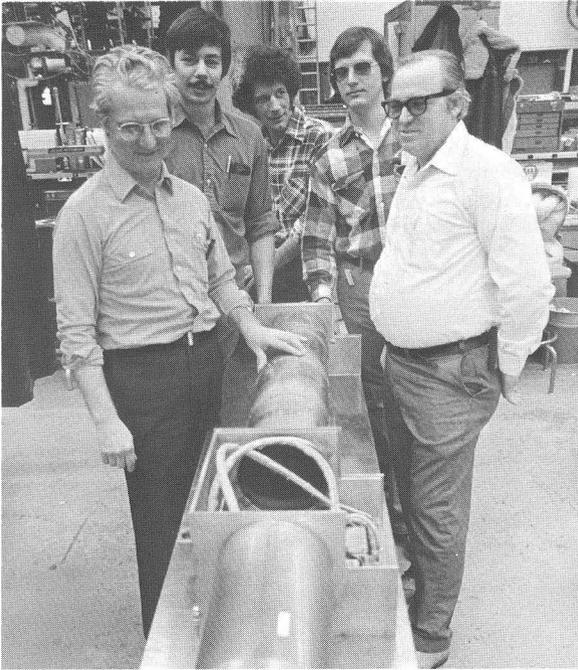
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(L-R) Harry Warren (in charge of mechanical aspects), Don Wendt (in charge of electronics), Moyses Kuchnir (project leader), Roger Nehring, Hannah Cranor, Ron Voigts and Chuck Hess work with the first superconducting spool piece. Just behind Kuchnir is the refrigeration system that cools the piece. Not shown is Joe Tague. The photograph was taken in Laboratory 2 in the Village.



(L-R) Caleb Meade, Rick Bossert, Greg Wilslef, Jerilyn McDowell and Del Wilslef with the refrigeration system. In background and to the right in the photograph is the superconducting spool piece hooked up for testing. Not shown is Ron Walker, head of the Central Helium Liquefaction Facility.



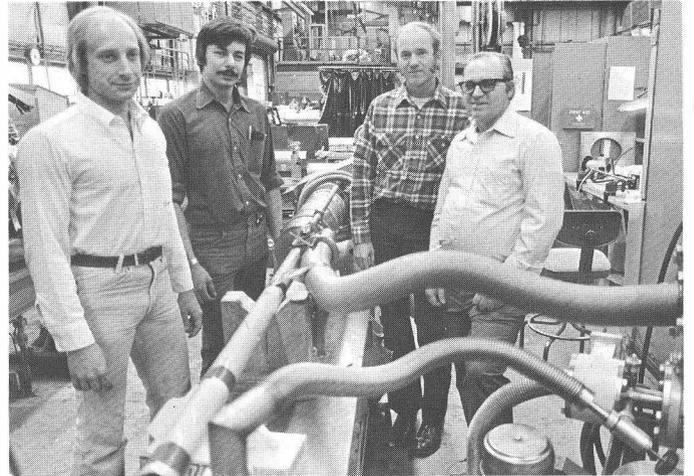
(L-R) Steve Kovacs, Tom Wokas, Jerry Domoleczny, John Voirin and Harold Stahl examine a single phase tube assembly at an early stage of its construction. The photograph was taken in Industrial Building No. 1.

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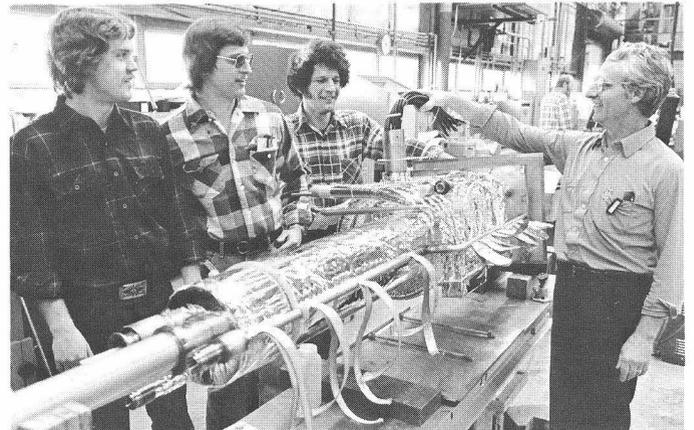
and epoxy impregnated in Laboratory No. 3 in the Village. The spool piece itself is assembled in Industrial Building 1. The piece is then tested in Laboratory 2. A team from the Central Helium Liquefaction Facility built a small refrigeration system to cool the spool piece to liquid helium temperature for testing. Eventually, every spool piece will undergo rigorous testing in Laboratory 2 before it is sent to the Main Ring.

The spool piece is another of the major elements that will go into the superconducting accelerator. The others include the 21-foot dipole and the quadrupole. The spool piece was designed for ease of construction as well as for ease of installation and replacement in the Main Ring. It contains those critical services that could not be included in the magnets themselves without making them too complicated. One spool piece is required for each half cell, which consists of four dipoles and one quadrupole. Overall, the superconducting accelerator will contain around 700 dipoles, 250 quadrupoles and 250 spool pieces. A spool piece is installed next to a quadrupole.

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(L-R) Dean Sorensen, Tom Wokas, Dan Smith (project leader) and Harold Stahl with a completed single phase assembly that is undergoing final inspection. Not shown are Tom Nichol and Norbert Engler, project engineers.



(L-R) Mark Ruschman, John Voirin, Jerry Domoleczny and Steve Kovacs with a completed spool piece internal assembly.



(L-R) Kay Garrett, Del Venters and Brian Johnson are winding correction coils in Laboratory 3 in the Village. Not shown is Jim Peifer, project manager.

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(L-R) Sue Miller, Wayne Walden, Jim Seeman and Rich Thomas are assembling correction coil packages.



(L-R) Clarence Black, Ed Norton, Mike McKenna and Don Connor prepare to vacuum impregnate a correction coil package.

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NEXT COLLOQUIUM SPEAKER

Prof. E. Eugene Larrabee of the Massachusetts Institute of Technology will be the next physics colloquium speaker. His talk will begin at 4 p.m. on Jan. 28 in Wilson Hall auditorium. The subject will be "The Renaissance of Classical Propellor Theory and its Application to Pedal-Driven Aircraft."

In his talk, Larrabee plans to describe the theory and incredible history of the Chrysalis biplane, built in 90 days and flown for 90 days in 1979. Dan A. Gross will be the speaker's host during his visit to Fermilab.

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HUBBARD STREET DANCE COMPANY
TO PERFORM HERE

by Ruth Ganchiff
Cultural Editor

The Hubbard Street Dance Company will perform at Fermilab Feb. 14.

Their dance concert will begin at 8 p.m. in Wilson Hall auditorium. Tickets are \$5 each for reserved seating. They may be obtained at the ticket sales desk in Wilson Hall atrium.

Richard Christiansen of the Chicago Tribune recently described the company as "the cat's pajamas, the bees' knees, the fastest gun in the west, the sexiest gal in town, champagne and caviar, the creme de la creme, groovy, dreamy, peachy, perfecto, hubbah-hubbah, solid-Jackson-solid, out of sight and where it's at." That's quite a mouthful from that respected reviewer about this exciting and energetic troupe that will perform a concert of American dance. This is the program that has put the Chicago-based company on the national dance map.

Their style might be described as having something for everyone. That something is a mix of talent, creativity, enthusiasm and skill. It's entertainment that's almost guaranteed to make you enjoy the evening.

The concert will consist of eight numbers, beginning with three young women smartly tapping to the dance instruction scratched out by "Bojangles" Robinson on an old phonograph record.



The Hubbard Street Dance Company

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CHILDREN'S ART NOW ON EXHIBIT

A remarkable collection of art by children is now on exhibit in the west wing of Fermilab's Art Gallery.

The youngsters participated in the Saturday Art School for Children of the Art Education Department at the University of Illinois-Champaign. The works will be shown for about a month. They include projects in pattern making, self-portraits, still lifes and simple picture making by boys and girls in grades one through nine.

"The instructors of the children's art classes at the university are student teachers learning correct ways to teach art," explained Saundra Cox, consultant to Fermilab's Visual Arts Committee. "The results of those lessons are these marvelous approaches to color, pattern, concepts and composition. We are grateful to Ted Zernich of the Univeristy for helping us with the arrangements for this loan."

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ANY MENSA MEMBERS HERE?

The Public Information Office would like to get in touch with anyone at Fermilab who is, or has been, a member of Mensa. Please contact Margaret Pearson, Ext. 3351.

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ENGINEER'S MEETING

An all-engineer's meeting will be held Jan. 30 with the director. The session will begin at 10:30 a.m. in Curia II.

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CHEZ LEON MENUS

Wednesday, January 28 - 12:30 p.m. - \$6.00

Asparagus soup
Selected stuffed vegetables
Rhubarb and strawberry torte

Thursday, January 29-- 7:00 p.m. - \$10.00

Paté de foie
Mixed meat kabobs
Acorn squash gratin
Green bean salad
Pear torte

For reservations, call Ext. 3082.

NEW INTENSITY RECORD

A new intensity record of 2.572×10^{13} protons per pulse out of the Main Ring at 400 GeV was set at 2:19 a.m. on Jan. 19. This exceeds the old record of 2.56×10^{13} set on Dec. 23, 1979. The all-time intensity record is 2.703×10^{13} set on Feb. 21, 1979, at 350 GeV. The new record at 400 GeV is the result of a joint effort of the Linac, Booster, Main Ring, Extraction and Operations Groups in the Accelerator Division.

McCORMACK TO SPEAK AT FERMILAB

Former U. S. Congressman Mike McCormack (D-Washington) will speak at Fermilab Feb. 5.

His talk on "Implementing Responsible Energy Policies--What We Must Do and How You Can Help" will begin at 3:30 p.m. in Wilson Hall auditorium.

McCormack, a Democrat from Richland, WA., was finishing his fourth term when he became one of the many Democratic casualties of the November Republican landslide. Widely regarded as one of science's most ardent advocates in the House, McCormack, a scientist himself, was chairman of the House Subcommittee on Energy Research and Production. He began his first term in national public office on Jan. 3, 1971, after a stunning upset victory of a popular and longtime Republican incumbent.

He holds a bachelor of science degree from Washington State University, which he earned in 1948, and a master of science degree in chemistry, which he was awarded there the following year.

McCormack saw service during World War II with the U. S. Army; was an instructor at the University of Puget Sound; was a researcher and scientist and worked on the Hanford Project. Before running for national office, he served as a state representative and a state senator, also for four years.

While in Washington, D. C., McCormack also served on the Committee on Public Works and Transportation.

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