

May 13, 1982

FERMI NATIONAL ACCELERATOR LABORATORY

HAVE YOU HUGGED YOUR CRYOSTAT TODAY?

by Dick Lundy

Cryostat number 900, presently on display in the Wilson Hall atrium, is one of the last to be assembled at Fermilab and signals the completion of an important part of the superconducting magnet construction for the Energy Saver/Doubler. The cryostat design was developed and tested at Fermilab over the past several years and represents the work of many physicists, engineers, machinists, welders, technicians, designers, draftsmen, etc.

A cryostat occupies only 1 inch of the radial dimension of the superconducting magnet but is required to transport 1 phase liquid helium, a 2 phase mixture of liquid helium and helium vapor, liquid nitrogen, and contains many layers of superinsulation as well as a vacuum insulating space. The present design accomplishes all this and insulates the superconducting magnet so well that only 7 watts of heat flow from room temperature into the wall of the magnet which is at -448°F .

The largest single components, the cryostat tubes, each approximately 20 feet long, are machined to precision tolerances by a group under Charles Matthews in the Central Machine Shop. This group has now handled more than 25 miles of large diameter stainless tubing, cutting each piece and locating holes in it to a few thousandths of an inch. The tubes and smaller components are cleaned, inspected, and assembled at Lab 5 by technicians under the direction of Del Miller of the Research Division, who was loaned to the Energy Saver for this effort.

Outside the Laboratory many vendors fabricated component parts from 304N stainless steel, an alloy chosen for its non-magnetic properties and its strength at liquid helium temperatures (-448°F).

Much of the assembly work involved welding which was carried out by Central Shop welders supervised by Jim Forester. All the welds are required to be vacuum tight and strong enough to withstand rapid



...Leon Lederman has.

temperature changes and the pressure loads that exist when superconducting magnets go normal. The integrity of the welds and the quality of other components was monitored by the Quality Control Group headed by Andrew Oleck.

In the process of assembling over 900 cryostats, important contributions in technique and tooling came from many people. When these were incorporated, the expected assembly rate of 10 cryostats per week was exceeded in some weeks by a factor of 2. On the average 15 cryostats per week were produced.

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UNIVERSITIES RESEARCH ASSOCIATION ELECTS STEVER

Dr. H. Guyford Stever has been elected president of Universities Research Association, a consortium of 54 universities which operates Fermilab under a contract with the United States Department of Energy.

Stever has had a distinguished career as a scientist, engineer, educator, and administrator. He is presently a corporate director, trustee and consultant to industries, universities, and government. Among his directorships are those of TRW, Inc., Schering-Plough Corporation, and Goodyear Tire Company. He currently serves as Chairman of the Assembly of Engineering of the National Research Council.

In 1976 and 1977 Stever served as White House Science and Technology Advisor to President Ford, Director of the Office of Science and Technology Policy, and as a member of the President's Committee on Science and Technology. From 1972 to 1976 he was both Director of the National Science Foundation and Science Advisor to the President.

Prior to his government service, Stever was President of Carnegie-Mellon University from 1965 to 1972, during which time the Carnegie Institute of Technology and the Mellon Institute were merged. He was a Professor of Aeronautics and Astronautics at MIT for 20 years as well as Head of the Departments of Mechanical Engineering, and Naval Architecture and Marine Engineering.

Stever is a member of the National Academy of Sciences, the National Academy of Engineering, and a fellow of numerous science and engineering societies. He holds an A.B. from Colgate University and a Ph.D. in Physics from California Institute of Technology.

CRYOSTAT 900 COMPLETE

(cont'd. from pg. 1)

Now that their assignment is complete, many of the people involved in this effort have turned to assembly of spool pieces and some have moved into the Cross Gallery area to receive training which will prepare them to be part of the work force which will commence the final installation of the Doubler components in June.



H. Guyford Stever

BLACK HISTORY ON DISPLAY by Dianne Ingram

"Twenty Nineteenth Century Black Women," a traveling exhibit, opened Saturday, May 1, in the second floor gallery of Wilson Hall. The featured black women were born in the nineteenth century, and most of their major achievements were during that period. These women distinguished themselves as journalists, educators, performers, lecturers, evangelists, and political organizers and left some written evidence of their lives, thoughts, and activities.

This collection of biographical sketches, photographs, and books is on loan from the National Archives for Black Women's History and the Mary McLeod Bethune Memorial Museum, both in Washington, D.C. This exhibit is part of the sustained effort of the staff of these organizations to chronicle the black woman's history in America.

The exhibit, on display through the end of May, is being co-sponsored by Fermilab and the West Towns Illinois Chapter, LINKS, Inc. LINKS, Inc. is an organization of women with 173 chapters, located in 33 states and Washington, D.C.

CHICAGO DANCERS TO GRACE AUDITORIUM JUNE 5

by Jane Green

Six of Chicago's most talented dance groups will appear in the Fermilab Arts Series Chicago Choreographers' Showcase on Saturday, June 5, 1982, at 8 p.m. in Ramsey Auditorium. Produced annually by the Ballet Guild of Chicago, the Choreographers' Showcase is a favorite for all dance enthusiasts. The 1982 program will feature dance styles ranging from classical to post-modern.



Maggie Kast performing "Dies Irae."
(Photograph by Charles Osgood)

BORIS KAYSER TO SPEAK MAY 19

"Quantum Mechanics of Neutrino Oscillation" will be presented by Dr. Boris Kayser, National Science Foundation, at the next Physics Colloquium on Wednesday, May 19, at 4 p.m. in Ramsey Auditorium.

Arms Control Lecture Tonight

Dr. John Steinbruner's arms control talk, "The Implications of Command Vulnerability," originally scheduled for May 12 will be given tonight at 8:30 p.m. in Ramsey Auditorium.

Jan Erkert will dance a section of her "Spinning Round," a free-flowing dance set to the music of the Beatles. As one critic noted, the choreography of "'Spinning Round' shows just how much fun modern dance can be."

Chicago's oldest continuously-produced dance company, the Joel Hall Dancers, has a repertory which includes not only the jazz works that made it famous, but ballet and modern dance as well. The troupe will perform "Erutuf I," an extraordinarily popular ballet relating to the space age.

Formerly the artistic director of the Chicago Contemporary Dance Theatre, Maggie Kast is regarded as an adventurous and experimental choreographer. She will perform a section of "Dies Irae," a moving piece of the deaths of children which uses Anne Sexton's poems as a springboard for Kast's choreographic imagination.

Since its inception eight years ago, the Evanston Concert Ballet has sparked the stage with the fire and grace of classical ballet. At Fermilab, the troupe will perform a suite entitled "Divertissements."

Post-modern choreographer Isadora Guggenheim describes her style as autobiographical dancing. Critics regard her work as appealing, humorous, and avante-garde. She will perform "Lifting Belly" with text by Gertrude Stein, "I Am A Fat Woman" and "will you accept a collect call from isadora, please?"

Akasha & Company will complete the program with "Undersurface," a piece choreographed by Maggie Kast which premiered in January. In this piece, inner feelings are contrasted with outer actions.

Admission to this highly popular showcase is \$5 and all seats are reserved. Tickets are now available at the Information Desk in the atrium of Wilson Hall.

TELL TAIL TEAL SEEN ON SITE



"THIS IS MEL ARD, PRESS DUCK, REPORTING SIR..... I'VE SPOTTED HIM!"

by Dave Carey

A distinguished European recently spent a week at Fermilab. The visitor, who goes by the name of Garganey, stayed in the guest accommodations on Eola Road just north of the Lederman residence. His presence quickly became widely known and people began arriving in numbers from various localities, including Michigan and Indiana just in hopes of gaining a glimpse of this noteworthy and elusive individual.

The garganey is a species of teal, which is a small duck. It is usually found only in Europe or Asia. An individual is seen in this country only once every several years. His reason for arrival is never certain, but it may have been diverted from its usual migration flight path by an unexpected storm.

The garganey is identified by having a beige and silver body and a maroon head with a horizontal stripe on the upper portion. The individual seen spent much of its time consorting with a blue-winged

teal. His arrival was first noted on Saturday, April 17. On Sunday, April 25 it was searched for diligently by a large horde of fanatic birdwatchers but was not seen. The guest accommodations, which consisted of a large puddle, dried up.

REGISTER SOON FOR FALL IIT/V

Applications for admission to IIT should be submitted as soon as possible in order to qualify for IIT/V (see **Ferminews** November 25, 1981) fall registration which begins June 21. For the first time, class enrollment will be limited. For further information contact the Training Office, ext. 4367.

WANTED!

Tennis players interested in participating in Fermilab tennis ladder and Industrial Tennis League. Contact Helen McCulloch, ext. 3126.

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