

# The Village Courier



fermi national accelerator laboratory

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## SAVER/DOUBLER REFRIGERATORS TESTED

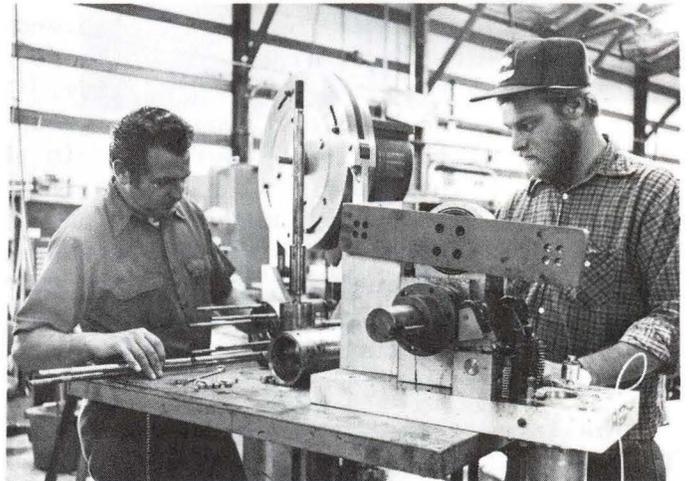
A successful test of the prototype of the refrigeration system for the proposed Energy Saver/Doubler at Fermilab was completed last week by the Cryogenics group of the Accelerator Division's Saver/Doubler section. The cold box and engines of one of the "satellite" refrigerators were tested in two of their three modes of operation in preparation for similar use in the early stages of Saver/Doubler operation.

Twenty-four of these units will comprise the cooling facility that will maintain the  $-450^{\circ}$  F. temperature of the Saver/Doubler superconducting magnets. Each of the satellite stations will form an independent module, cooling 43 (1/24th) of the magnets in the new ring, through a pump loop that will start and end at each service building around the accelerator ring.

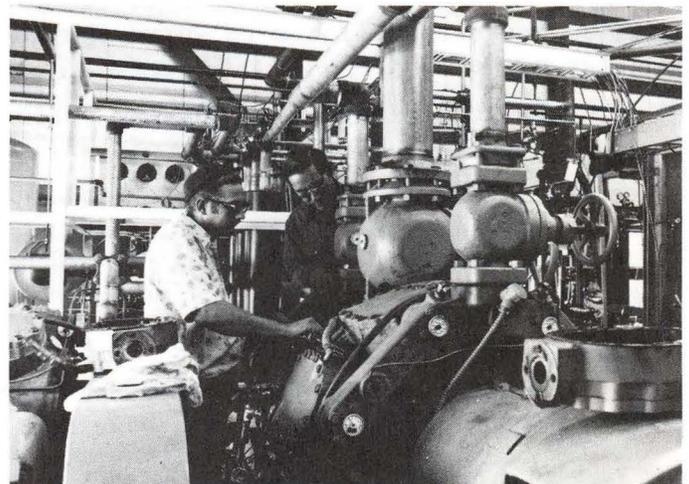
The same units will also be produced for use with the superconducting magnets to be installed in the beam switchyard to accommodate beams of 500 BeV and higher energy when these become available. Another dozen or so of the refrigeration units may be used in the experimental areas, particularly in the superconducting magnets manufactured for the new Pion Beam line in the Proton Area.

Claus Rode, who heads the Saver/Doubler group that made the successful test, reports on the cryogenic progress, "Our Doubler refrigeration units have been in design and development for several years. We first had to develop a way to pump liquid helium much like water. This has been done during the last three years, mainly using a 400 ft. long loop built in the old protomain. Don Richied and Cryogenic Consultants Engineering Company carried the main responsibility for this work.

"We then turned to studying with the Switchyard Group the effects of the proton beam on a prototype superconducting magnet which was installed in the extracted beam line in the Transfer Hall and in the B-12 service building.



...Vic Garzotto (L), Rick Diehl clean helium expansion engine developed for Saver/Doubler refrigerator...



...Tony Rader (L), Dick Brazzale at first stage compressor for helium satellite unit in Lab 2 in the Village...

(Continued on Page 2)

SAVER/DOUBLER REFRIGERATORS (Continued)

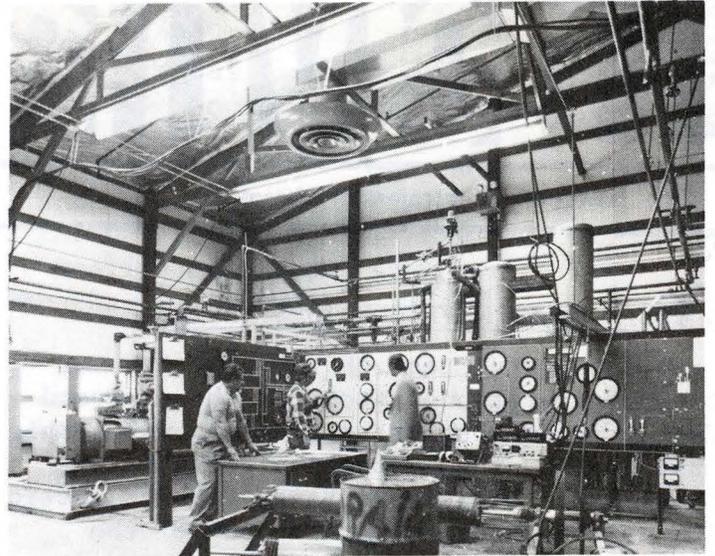
"We have installed a second pump loop which utilizes 2 CTI 1400 helium refrigerators at B-12 for testing a string of magnets in the B-12 service building, where the program is to study the cryogenic aspects of strings of magnets."

The satellite units will combine with the central helium liquefying plant, also under development at the intersection of Roads B and D, adjacent to the Magnet Facility. The next test by the Doubler Cryogenics group will be a trail of the "liquid user" mode in the satellites. This test will simulate the use of about 90 liters of liquid helium per hour in the refrigerators, that would be supplied by the central liquefying plant. The helium vaporizes in the course of its use in the magnets and is returned to the central plant for re-liquefying.

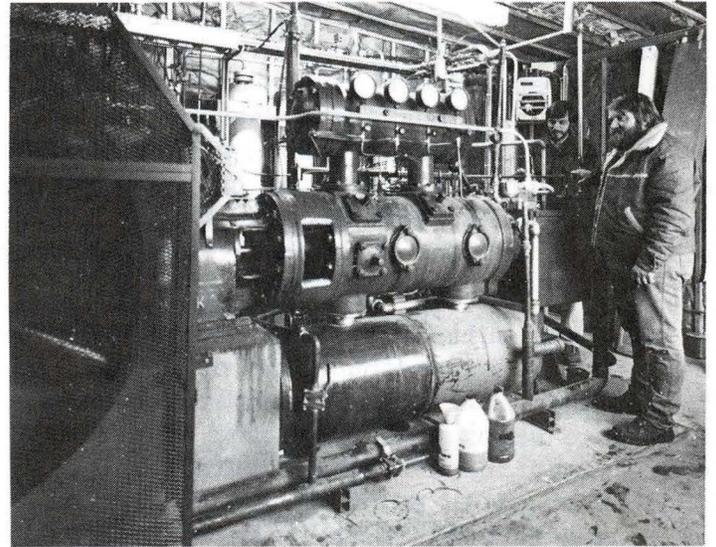
The large capacity of the central plant will give the Saver/Doubler greatly increased efficiency of operation. A former liquid propellant plant acquired by the Laboratory from the GSA excess property listing, this plant formerly supplied oxygen/nitrogen to the missile program in California. The components are being refurbished and the larger part of the plant will be moved to Illinois to serve the Saver/Doubler project.

Present scheduling calls for the plant to come into operation in the fall of 1977.

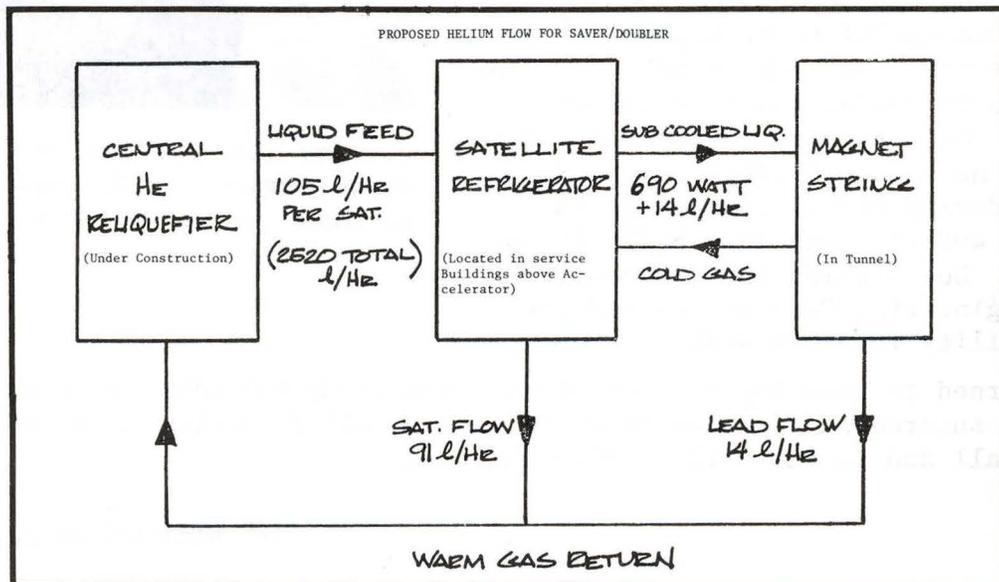
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...Paul Furio, Ron Norton, Claus Rode at prototype control center...

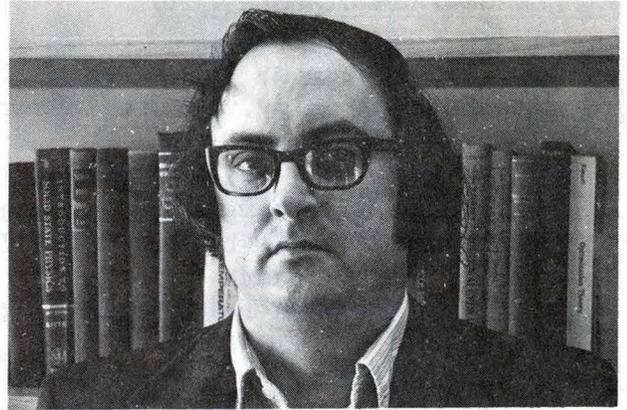


...Mike Hentges (L), Jack Johnson at refurbished compressor of purification system...



## BARDEENS HONORED

Dr. William A. Bardeen, a member of the Fermilab Theoretical Physics Department, attended a luncheon given by the President at the White House on January 10th on the occasion of the Presentation of the Presidential Medal of Freedom. Bill accepted a medal, the country's highest civilian award, on behalf of his father, Nobel Laureate John Bardeen, who was out of the country on the luncheon date. John Bardeen received a Nobel Physics Prize in 1956 for the development of the transistor and a second in 1972 for his work on superconductivity.



...William Bardeen...

A notable physicist in his own right, Bill will leave Fermilab about March 1 to spend six months at the Max Planck Institute, Munich, Germany, as the recipient of a Senior U. S. Scientist Award from the Alexander von Humboldt Foundation. The fellowship is given to highly qualified scientists in recognition of accomplishments in research and teaching. The Foundation seeks to foster international exchange among scholars of all scientific disciplines in the Federal Republic of Germany. Since 1972 the Foundation has administered a program in gratitude to the United States to commemorate the 25th anniversary of the Marshall Plan. The award gives the recipient the opportunity to do research of his own choice in the Federal Republic of Germany.

Dr. Bardeen joined the staff of the Fermilab in the fall of 1975, coming from Stanford University where he was a Professor of physics.

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## URA SCHOLARSHIPS OPEN

Children of Fermilab employees who will begin a four-year college program in the fall of 1977 can apply for a scholarship for up to \$1,200 per year for four years, sponsored by Universities Research Association, Inc., the parent body of Fermilab.

Students selected for the URA scholarships are selected on the basis of their Scholastic Aptitude Test (SAT) scores -- both verbal and math. A copy of the student's official notification of scores must accompany the scholarship application. The score range of scholarship recipients varies from year to year. Winners are chosen by the staff of URA's Washington office.

Applications for the URA scholarship are now available from Vivian Butler or Ruth Thorson, Personnel Office, CL-6E. They must be returned by March 1, 1977.

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## EXHIBIT OF MODERN JAPANESE PRINTS

In addition to the exhibit of Ukiyo-e prints by Hiroshige, a new exhibit of modern Japanese prints has been hung in the west end of the 2nd floor lounge in the Central Laboratory. These prints form a unique collection in that they represent the work of some of the best-known modern Japanese print makers. Some show a strong western influence, while in others the combination of east and west is most effective. Both shows will be up through the first week of February.

Another exhibit in the Atrium features photos contributed by the Fermilab Photo Unit.

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A MESSAGE FROM LINCOLN READ

"Let me express my thanks to my friends and colleagues at Fermilab for their help to my wife and family, for their cards, and other remembrances since my automobile accident on December 30th.

"I seem to be recovering completely from the internal injuries I sustained in the accident. I have begun phusical therapy on the upper part of the body. My lower legs are in casts and the leg injuries are healing slowly but steadily. I am looking forward to walking again in a few months."

Dr. Read is still a patient at Central DuPage Hospital, Winfield. He enjoys short visits from friends. Jackie Coleman, Ext. 3211, arranges visiting schedules for the Reads to match hospital regulations. Dr. Read's spirit and determination are an inspiration to all who visit him.

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NALREC's CANDLELIGHT BOWL

Saturday, February 12  
9 p.m. - 1 a.m.  
Bowling Green

Tickets now on sale. At \$7.00 per person, includes bowling and buffet. Special prizes for one comedy bowl, one special bowl, one scotch double bowl. BBQ chicken and roast beef sandwiches after second game.

Get tickets from Nelson Sample, Ext. 3366; Don Sorenson, Ext. 3087; Ralph Ovitt, Ext. 3719; John Stoffel, Ext. 3157.

CLASSIFIED ADS

FOR SALE - Humanic ski boots, size 9; Volkl skiis, size 170. Miller poles, \$40.  
Call 355-0149.

FOR SALE - Scott's Fertilizer - Boy Scout Tr 106. High nutrient 36-4-4. \$10.50/5000 sq. ft., or with weed killer 32-4-4, \$12.50/5000 sq. ft. Deliver March 14.  
J. Grimson, Ext. 3698.

FOR SALE - Complete stereo system - \$75. Decca receiver, BSR turntable, SMG speakers. Good condition, about 5 yrs. old. Call Dan, Ext. 3911.

FOR SALE - 1975 GT Vega wagon - AM/FM stereo - p/s, p/b, air cond. \$2,800. J. Olsen, Ext. 3293.

NICE APT. - Wanted, reliable person to share 2 b.r. apt. at Pebblewood Apts., close. Call Ext. 3721 after 4 p.m. Dave.

FOR SALE - 1970 Chevy Pick-up, V-8, stick shift, camper cover, large bed. Call Don, Ext. 3087, 231-5285, page 223.

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