

# The Village Critic

 national accelerator laboratory

Operated by Universities Research Association Inc.  
Under Contract with the United States Atomic Energy Commission

Vol. 4 No. 12

March 23, 1972

## PROGRESS REPORT - MARCH 6 THROUGH MARCH 10

The accelerator operated at 75 BeV through Friday, March 10. Operations were then shut down for work on the water system. Good progress has been made on the installation of the water system.

### URA BOARD ELECTS OFFICERS AT NAL

The Board of Trustees of the Universities Research Association, Inc. (URA) recently held its annual meeting at the National Accelerator Laboratory. A consortium of fifty-two major research-oriented universities (51 in the United States, one in Canada), URA was formed in June of 1965 to carry on research in the physical and biological sciences.

When the need arose for an organization to operate the National Accelerator Laboratory, URA subsequently received a contract to design and construct NAL for the Atomic Energy Commission. URA's chief administrative offices are located at 2100 Pennsylvania Avenue, Washington, D. C.

At the annual meeting, the URA Board of Trustees re-elected Robert F. Bacher of the California Institute of Technology, Pasadena, California, as its chairman, as well as A. G. Norman of the University of Michigan, Ann Arbor, Michigan, as vice-chairman. Two new members of the Board of Trustees are Gertrude Goldhaber of the Brookhaven National Laboratory, Upton, New York, trustee-at-large, and Donald H. Miller of Northwestern University, Evanston, Illinois, trustee for Region 4.

William Webster of the New England Electric System, Boston, Massachusetts, who has served as URA trustee for three years, was elected the first honorary trustee.

URA is governed by a Council of Presidents of member universities. New chairman of the Council is Martin Meyerson of the University of Pennsylvania, Philadelphia. Norman Hackerman, of Rice University, Houston, Texas, is vice-chairman.

Newly-elected committee chairmen are Gerald C. Phillips of Rice, chairman of the



R. Bacher



A. Norman



G. Goldhaber



D. Miller



W. Webster



M. Meyerson



N. Hackerman



G. Phillips



L. Merritt

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URA BOARD ELECTS OFFICERS AT NAL (Continued from Page 1)



*...Members of the URA administrative staff are shown here in their Washington, D. C. office. They are (L to R) Susan Jane Stack, Norman F. Ramsey, Betty Stratton, Bradley F. Bennett, Leonard L. Bacon, Robert A. Williams...*

Scientific Committee, and Lynne L. Merritt of the Indiana University, Lafayette, Indiana, chairman of the Administrative Committee.

Administrative officers of Universities Research Association are:

President, Norman F. Ramsey, who is also Higgins Professor of Physics at Harvard University; vice-president for administration, Capt. Bradley F. Bennett; secretary, Leonard L. Bacon; treasurer-comptroller, Capt. Robert A. Williams.

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MORE MARCH 11 PARTY PICTURES



NAL Photos by C. Long

THEORY OF HIGH ENERGY ACCELERATORS I--The Lawrence Group and Wilson Scaling  
Prepared by Harry J. Lipkin for the NAL 200 BeV Celebration.

High energy accelerators began with the Lawrence transformation, invented by E. O. Lawrence, which accelerates or "boosts" particles from a frame in which they are at rest to a "Lawrence frame" moving at high velocity. The Lawrence boost is achieved by means of the "Lawrence Force" exerted by an electromagnetic field on a charged particle. The group of particle accelerator machines which followed Lawrence's invention: cyclotrons, synchrocyclotrons, synchrotrons, betatrons and linacs are sometimes called the "Lawrence Group."

The theorists, who insist on giving credit for everything to theorists, have confused the issue by giving all the credit for these developments to a Dutch theorist named Lorentz. They have successfully misled the literature to forget Lawrence completely and have introduced into common usage the erroneous spellings of Lorentz transformation, Lorentz boost, Lorentz frame, Lorentz force and Lorentz group. This error should now be clear to the reader.

Modern developments in accelerators include scaling, dilatations and the light cone, and are associated with the name of Wilson at Cornell. Here again theorists confused the issue by noting that there were two Wilsons at Cornell and giving credit to the theoretical Wilson. However, it should be clear which Wilson was the pioneer in the approach to the light cone and who accelerated particles to energies many times their rest energy where they emerged from the machine moving very close to the light cone. Wilson studied the behaviour of accelerators under dilatations by making them bigger and bigger. He is currently investigating "Wilson Scaling" in which nothing else changes as the energy of the accelerator is increased. In the "Wilson Scaling Limit" pictures of 100, 200, 300, 500 and 500 GeV accelerators all look identical, despite the large energy difference.

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NALWINGS TO PRESENT FILMS

On March 29, NALWINGS will present an evening of films beginning at 5:30 p.m. at the Village Barn. Final discussions on organizing a free ground school will also be held. Call Tony Frelo, Ext. 349, for further information.

Shown in the picture on the right, John Hunt (Left) of the local FAA office, recently demonstrated vertigo to members of the NALWINGS Flying Club, Ed Ziganto (Center) and Miguel Awschalom.



Photo by Tony Frelo, NAL

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PING PONG PLAYERS WANTED....Set for the first week in April is the annual Ping-Pong Tournament. Train for international competition right here at home. Practice tables now set up in the Village Barn; paddles and balls available from Personnel House, 21 Sauk. Visitor and women players welcome. Can anyone beat 1971 champ, Jim Walker? For further information and to register, call Elbert Smith, Ext. 461.

THIS WEEK ON THE NAL SOCIAL CALENDAR

Saturday, March 25, 1 p.m. - Village Barn - ANNUAL EASTER EGG HUNT for children under 10. Bring your own baskets; lots of eggs and goodies. No admission charge. For further information, call Walt Gorecki, Ext. 279.

Sunday, March 26, 7:30 p.m. - Village Barn - SELECTED SHORTS presented by the NAL International Film Society, demonstrating the technique of presenting well made short stories and short subjects on film. To be shown are "The Hat," "The Hangman," "Occurrence at Owlcreek Bridge," "Why Man Creates," "Night on Bald Mountain," and "Is This War Necessary." Admission \$1.00. Visiting families welcome!

Saturday, April 8, 9 p.m. - CANDLELIGHT BOWL sponsored by NALREC to be held at Bowling Green Lanes on Roosevelt Road. \$5.00 per couple. Prizes. Make your reservations before March 30th. Call Doug Maxwell, Ext. 782 for further information.

## CREF UNIT VALUES EXPLAINED - (By C. F. Marofske)

A Laboratory employee can elect to place a portion of his retirement plan investment in the College Retirement Equities Fund. The fund is invested in common stocks and bonds and the overall value fluctuates dependent on the performance of the stocks held by the fund in the market.

The per unit dollar value for CREF accumulation units during 1971 is listed below:

1971 - January, \$41.37; April, \$45.23; September, \$43.85; December, \$46.21.

For example, if you entered 1971 with ten CREF units, the value of those units in January, 1971 was \$413.70; those same units had a value of \$462.10 in December. This example does not take into account the additional units purchased during the year of 1971 and added to your account.

The number of additional units purchased is dependent upon the level of participation which you selected for the CREF portion of your retirement plan, and on your salary level. Assuming that your earnings were \$10,000 in 1971, split equally over the twelve months, and that an amount equal to 10% of your salary was being deposited with TIAA-CREF, a monthly payment to the retirement fund of \$83.33 on your behalf would be made by the Laboratory. Also assuming that you have elected to deposit half of the contribution in CREF and half in TIAA, each of the contract funds would receive a monthly premium from NAL in your name of \$41.66.

The CREF contribution goes toward the purchase of units for your account at the current market value of CREF accumulation units. For example, in January the \$41.66 would buy 1.007 units; in April .921 units would be added to your account; in September .950 units would be added to your account; and in December the \$41.66 would buy .902 of a unit. The actual number of CREF units purchased for you through the retirement fund contract is identified in your Annual Statement from the TIAA association. TIAA-CREF is currently distributing its annual report on individual contracts. This report is sent directly to the individual's home. If you were in the retirement program during 1971 and do not receive a statement this month, please contact the Personnel Office or the insurance company.

Questions concerning your particular account can be answered by writing directly to Teachers Insurance and Annuity Association, College Retirement Equities Fund, 730 Third Ave., New York, N. Y. 10017. Be sure to include your contract number.

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WEDDING BELLS WILL RING SOON!....for Donald Champion (Machine Shop) and Virginia Lee Smotzer who will be married March 24th in Aurora.

....And for John L. Nelson (Accelerator Section) and Joe Anne Oslin who will be married in Wheaton on April 8.

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### CLASSIFIED ADS

WANTED-CUSTOMERS for Oyster/Chili Dinner served with salad, homemade pie or cake. All you want to eat. Adults, \$1.75; children under 12, \$1. Bethel Church, 1020 W. Jefferson, Naperville. March 25, 5-8 p.m. Proceeds benefit service projects.

FOR SALE - '71 Porsche, 914-4, excel.cond.,grn. Appearance group, new radials, \$3,500. Carolyn, Ext. 521 or 627-7926.

FOR SALE - '68 Triumph motorcycle 250 cc.,excel. cond. \$350. Mike Hall, Ext. 521, or 739-5744.

FOR SALE - Thunderbird '70, 2 dr. Landau a/c full pw. Mint cond., \$3,300. Call 232-7507.

FOR SALE - '60 Ford 1/2Ton pickup. Call 584-2154.

FOUND - Wool blue plaid men's scarf, lost at 17 Potawatomi. Claim at Personnel Office, 21 Sauk.

LOST - at March 11 party - short gray fur jacket w/3/4 length sleeves. Call Barb, Ext. 534.

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The Village Crier is published by the Public Information Office of the National Accelerator Laboratory. Margaret M.E. Pearson, Editor. Correspondence may be directed to the address below. Telephone number of the Laboratory is 312-231-6600.

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