

The Village Courier

 national accelerator laboratory

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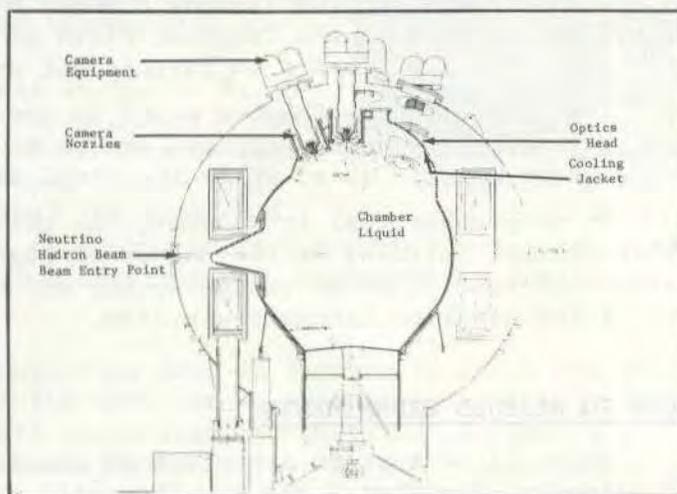
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November 4, 1971



....(L to R) Drs. F. R. Huson and Wm. B. Fowler of NAL Bubble Chamber Section, with the newly-arrived 15 ft. bubble chamber....

Photo by Tim Fielding, NAL



....A line drawing showing the major elements of the NAL 15-foot Bubble Chamber....

IT'S A B I G ACHIEVEMENT ! ! !

Thank you, Delphi, Indiana...Waukesha, Wisconsin...Birmingham, Alabama...and several other points east and west...The major component of the 15-ft. bubble chamber arrived by rail at NAL on October 25th, the last stop in a nationwide design and fabrication effort that began over a year ago.

The 39,000-pound bubble chamber is a sphere of 12½-foot diameter of 1 1/8" thick 316L stainless steel, topped by a 9-foot-diameter hemispherical "optics head." Six strategically-located "camera nozzles" allow stereo views of bubble tracks when the chamber becomes operational. A stainless steel "cooling jacket" also lines the inside of the "optics head."

Fabrication of the various parts resulted from the efforts of Wisconsin Centrifugal Company, who constructed the camera nozzles in Waukesha, Wisconsin; Canadian Lukens of Rexdale (Toronto), Canada, who built the optics head; Alloy Crafts of Delphi, Indiana, the cooling jacket. Chicago Bridge and Iron constructed the remaining portion of the chamber in Memphis, Tennessee and Birmingham, Alabama. Final assembly was completed in the Chicago Bridge and Iron Birmingham plant. Total cost of the chamber was \$250,000.

The large chamber vessel was carefully delivered from the railroad siding at the north edge of the site to the NAL Village by a Belding Engineering crew on a beautiful 75° Indian Summer day. The arrival heralds a significant step in the construction progress at NAL.

The NAL 15-foot bubble chamber will operate at liquid hydrogen temperature of -423°F and will undergo rapid pressure changes during each accelerator pulse. Millions of photographs are planned during the life of the chamber. When operating, the chamber will be filled

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with liquid hydrogen, deuterium, or a mixture of hydrogen and neon.

One of the beams available into the chamber is a beam of hadrons. In this case, the particles enter the liquid through a thin stainless steel beam window on the accelerator side of the chamber. The interactions of these particles in the liquid are photographed by cameras which view the chamber through the optics nozzles.

Another beam consists of neutrinos. In this case, the weakly-interacting neutrinos are dispersed over the entire area of the chamber wall and these interactions are photographed.

Almost certainly the 15-foot chamber used with the NAL accelerator will produce exciting new discoveries in the frontier field of particle physics and is expected to be particularly useful in experiments to further our understanding of the role of the elusive neutrino.

The entire Bubble Chamber staff is now working hard to make the chamber operational. They have accomplished an enormous amount of work in a short span of time. Some of the most crucial days now lie ahead while the final assembly and check-out is completed.

It is planned that in November the chamber will be moved to its final position in the Bubble Chamber Building at the corner of Road A and Wilson Road, where it will be installed inside a 22-foot-diameter vacuum sphere and the completed installation will then become a part of the Neutrino Laboratory system.

GROUP TO DISCUSS EXPERIMENTS

NAL will be host to a meeting of about sixty experimentalists and theorists on Friday and Saturday, November 5 and 6. They will meet to discuss "Possible experiments in electromagnetic interactions at NAL energies."

The current meeting is being conducted in a workshop format with topics being reviewed in a brief talk by one of the participants followed by intensive discussions in the whole group.

J. J. Sakurai of U.C.L.A. is chairman of the organizing committee. Other committee members are C. A. Heusch, University of California at Santa Cruz; L. W. Mo, University of Chicago; F. M. Pipkin, Harvard; S. B. Treiman, Princeton-NAL-University of Chicago.

Attendance is by invitation only.

NEW ARCHEOLOGY GROUP TO MEET

NAL archeology buffs may be interested in the November 7th meeting of the newly-formed Waubensee Community College Society for Indian Studies. Virgil J. Vogel, Professor of History at Amundsen-Mayfair College and author of numerous articles on Indians, will speak on "Interesting Notes on Indian Place-Names in Illinois." The meeting will be at 2:00 p.m. in the College Student Center, Illinois Rt.47 at Harter Road, south of Sugar Grove.

The purpose of the society is to make available artifacts and historical materials concerning Indian Groups which occupied the Fox River Valley. Any person interested in joining the group is urged to attend this first meeting. Membership dues are \$1.00; there will be a charge of \$1.00 for adults and 50¢ for students for the November meeting.

The program for 1971-72 includes talks by Dr. Stuart Struever, Northwestern University professor who directed archeological diggings in 1970 at NAL and Dr. Richard Leaky, Administrative Director of the National Museum of Kenya.

ATTENTION EMPLOYEES OF DRAFT AGE: The Personnel Department points out that those with a current II-A Draft Classification whose lottery number is above this year's ceiling number 125, may give up this deferment prior to December 31, 1971 and be counted as a member of the 1971 First Priority Selection Group. On January 1, 1972 they would move to the Second Priority Selection Group and will not be inducted except in case of a national emergency. Please call William Butler at Ext. 324 with any questions regarding this point.

NAL EXPERIMENTALIST WINS WRITING AWARD

A science writing award has been presented to Robert H. March, University of Wisconsin professor of physics who is a member of a team preparing Experiment No. 8 at NAL. Awarded jointly by the American Institute of Physics and U. S. Steel Corporation, the \$1,500 prize went to March for his textbook, "Physics for Poets," published by McGraw-Hill Book Company.

March, 37, earned his B.A., M.S. and Ph.D. degrees at the University of Chicago, where he once worked as a scanner in Enrico Fermi's laboratory. He has been at Wisconsin since 1960, except for leaves spent at CERN and at the Lawrence Radiation Laboratory.

The text book is now being used in 80 schools in the U. S. It is aimed at college level students who are not science majors. March teaches in both the physics department and the liberal arts college at Wisconsin. His textbook reflects his need to reach students in both spheres. As March puts it, "The type of person for whom this book is intended is insulted when he is told that while he can read modern literature, study contemporary art, and wrestle with the problems of modern society, contemporary physics is beyond his powers of understanding."



Robert H. March
(U. of Wisc. Photo)

March also reviews for his students the significant eras in physics in which the greatest advances were made. He explains the roles of the most famous physicists. "I believe that both for the general reader and for scientists themselves the specific content of a physical idea is far less important than the process by which it was born," writes March.

In Experiment No. 8, one of the first to be approved at NAL, March collaborates with L. G. Pondrom, also of the University of Wisconsin, and O. E. Overseth of the University of Michigan. He spends two or three days a week at NAL, where he feels the most significant developments in high energy physics in many years will shortly emerge. "It is a small experiment," says March of his work here at NAL. "We all do some of the work....I like it better that way."

FILM FESTIVAL - FRIDAY, NOVEMBER 5

Tickets are still on sale for "Major Barbara," the first film in a film series at NAL. The movie will be shown at 8 p.m. on Friday, November 5th in the Village Barn.

The film classic features dialogue, scenario, and connecting sequences by the author, George Bernard Shaw, who worked with the crew when the production was filmed in 1941. The social and individual conflicts which Shaw considers in "Major Barbara" are as timely now as when the play was written.

Tickets are \$1.00 each and may be purchased from Liz Foster, Director's Office; Eric Jarzab, Personnel, 21 Sauk; Carolyn Hines and Dottie Alderton, Plant Management, 43 Feldott Road; Fran Pisarek, Housing Office, 33 Shabbona.

MARK YOUR CALENDAR:

FAMILY SWIM NIGHT - Thursday, November 18 - 7-9:00 p.m. - Marmion Academy.

HOCKEY GAME TRIP - Sunday, November 28 - Chicago Blackhawks vs. Toronto Mapleleaves.

GYM NIGHT - Tuesday, December 7 - West Chicago Junior High School

THEATRE PARTY - Saturday, February 12, 1972 - Candlelight Dinner Playhouse - "Fiddler on the Roof."

NEWS FROM NALWO

(Special note to husbands of NALWO members: The monthly NALWO Bulletin will no longer be mailed to homes. Please take a copy of The Village Crier home with you so that your wife will have this news.)

Activity group meetings during November:

CERAMICS - Meets from 12:00 to 4:00 p.m. every Tuesday at the White Farm.
For information, call Joan Sculli - 355-4109.

PHOTOGRAPHY - Now trying to arrange a meeting time.
For information, call Rosemary Olson - 584-9117.

BRIDGE - Next meeting will be on Wednesday, November 10 - 1:30 p.m. at the home of Mary Fray, 423 Woodward Avenue - Geneva - 232-0724.

SING-A-LONG - Next meeting on Friday, November 19, 8:30 p.m. at the home of Mr. and Mrs. Paul Reardon, 1483 Morse Street, Wheaton. For directions and information, call Herta Laukant, 665-0439.

GOURMET - Annual Christmas smorgasbord will be on Saturday, December 11th at the home of Sonia and Tom Collins, 413 S. York Road, Elmhurst. Seating limited to 40 persons. Call Mary Ann Ryk for reservations and recipe - 968-8651.

PLAYGROUP - For pre-schoolers - meets Tuesday, Wednesday and Thursday mornings from 8:30 to 11:30 a.m. Visitor families welcome.

(Information for this calendar should be submitted to Barbara Lach, 231-0107.)

FRENCH CLASSES PLANNED

The presence at NAL of visitors from foreign countries is providing a welcome bonus for NAL wives. Mrs. Helen Goldberg, whose husband, Marcel, is a laboratory visiting experimentalist, and whose home is in Paris, has agreed to teach a class in conversational French for those who have some knowledge of the language. Mrs. Goldberg has an advanced degree in French Literature.

The first class will be held on Tuesday, November 9, at 1:00 p.m., at the White Farm. A charge of \$9 for six sessions will be made. Mrs. Goldberg suggests not more than six to a class. If enough people want to begin the study of French, another class for beginners will be formed.

This is a great opportunity to improve one's accent and facility with the French language. To sign up or for additional information call Fran Pisarek or Janice Roberts at Ext. 560.

CLASSIFIED ADS

GIVE AWAY-to good home-Male Gldn.Labrador 3 yrs. Needs lg.yard. Hse.broken. John, Ext. 211.

GIVE AWAY-Basketball bk.board & baskets.Old but usable with little fixing. W.Hanson, Ext.555.

FOR SALE- 7 Wk. old black Schnauzer, female, \$60. Call Mickey, 879-2900, Ext. 250.

FOR SALE- 2 White-Wall Snow Tires, 900-15 (Firestone)
Used 3 months. \$40 pair. G. Zielbauer, Ext. 393.

FOR SALE- '66 Ford Fairlane GT 390 cu.in. w/4 speed
& console. Blk.vinyl bucket seats,4 crager mags. Exc.
condition. Call Karen, Ext. 595 or 851-0378.

FOR SALE- '63 Dodge Dart, 37,000 mi. 2 dr.,6 cyl.
Motor overhauled. A little rust, no rattles. Make
offer; '69 Ford Pickup & Camper,390 V8, 4 spd.,air,
camper spec.;sleeps 5,Self-contained. \$4,500. Every-
thing goes. H. Clover, 231-7850.

FOR SALE-'69 Honda, CB 350, Excellent Condition. Call
Darrell, Ext. 575.

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