

# The Village Critic

 national accelerator laboratory

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

Vol. 3 No. 43

October 28, 1971



...Aerial view of NAL experimental areas under construction...

Photo by Tony Frelo, NAL

beam and will go into detectors of progressively bigger size. Eventually the Chicago cyclotron magnet will be installed in the muon beam for detailed studies. By-passing these beams is a charged particle beam suitable for use by both bubble chambers.

The 30-inch chamber will soon begin operation in such a beam.

The Meson Laboratory will provide a variety of general purpose secondary particle beams produced by bombardment of targets by protons of energy up to 200 BeV. Many of the particles in these secondary beams will be mesons, but there will also be a neutron beam and a diffracted proton beam.

A beam to the Proton Laboratory will be directed into any of three 2000-ft. long pipes leading to permanent concrete structures containing utilities. In this laboratory, experimental areas will be underground, surrounded by sheet-piling structures which can easily be altered to suit each experiment.

Following the design of the experimental areas, Dr. Wilson, NAL Director, wrote to high energy experimentalists inviting them to send proposals for doing experiments at NAL. In order

## THIS IS WHERE THE NAL ACTION WILL BE....

In an area over one and one-half miles long and 1,500 feet wide, that begins in the footprint area at the beam switchyard and extends out at a tangent from the Main Ring, lie the three huge NAL experimental areas. By name, they are: the Neutrino Laboratory, the Meson Laboratory, and the Proton Laboratory. The aerial photo at left, taken last July, shows the location and relative size of the three areas, all now in various construction phases.

It is to these buildings and facilities that high energy physicists from all over the world will come to probe deeper than ever before into the mysteries of the fundamental particles of matter.

It is expected that the multi-purpose Neutrino Laboratory will come into operation first.

This area contains the 15-foot and 30-inch bubble chambers as well as facilities for counter experiments. These larger detectors will be used to study neutrino interactions.

The neutrino beam is the dominant feature of the area and the source of its name. Accompanying the neutrinos are muons--particles produced when the neutrinos are created. They are bent out of the neutrino

beam and will go into detectors of progressively bigger size. Eventually the Chicago cyclotron magnet will be installed in the muon beam for detailed studies. By-passing these beams is a charged particle beam suitable for use by both bubble chambers.

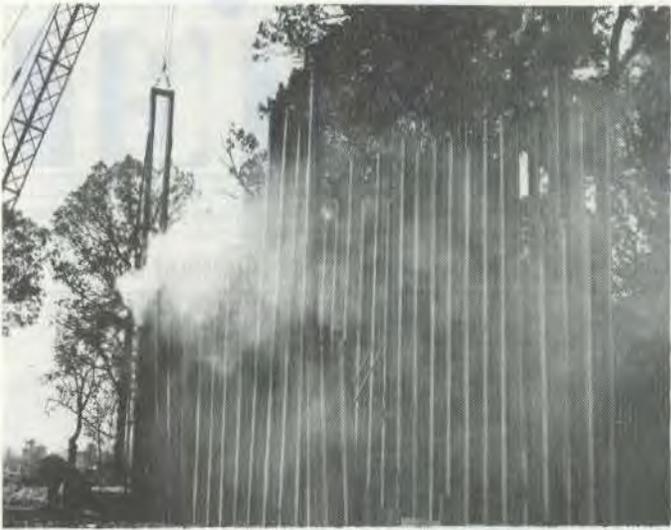
The 30-inch chamber will soon begin operation in such a beam.

The Meson Laboratory will provide a variety of general purpose secondary particle beams produced by bombardment of targets by protons of energy up to 200 BeV. Many of the particles in these secondary beams will be mesons, but there will also be a neutron beam and a diffracted proton beam.

A beam to the Proton Laboratory will be directed into any of three 2000-ft. long pipes leading to permanent concrete structures containing utilities. In this laboratory, experimental areas will be underground, surrounded by sheet-piling structures which can easily be altered to suit each experiment.

Following the design of the experimental areas, Dr. Wilson, NAL Director, wrote to high energy experimentalists inviting them to send proposals for doing experiments at NAL. In order

(Continued on Page 2)



....Sheet-piling work on the beginning of the Proton Laboratory....

Photo by Tim Fielding, NAL

to seek advice on the proposals, Wilson appointed an Advisory Committee composed of experienced theoretical and experimental physicists. The members of the Program Advisory Committee are: Chairman, Robert G. Sachs, University of Chicago; Owen Chamberlain, University of California, Berkeley; Thomas H. Fields, Argonne National Laboratory; Val L. Fitch, Princeton University; Murray Gel-Mann, California Institute of Technology; T.B.W. Kirk, Harvard; Tsung-Dao Lee, Columbia University; W.K.H. Panofsky, Stanford University; Don Reeder, University of Wisconsin; Nicholas P. Samios, Brookhaven National Laboratory; and William J. Willis, Yale University.

The Committee reviewed the nearly one hundred proposals that were submitted in 1970 and the sixty submitted since then. In all cases they made recommendations to Dr. Wilson who used the recommendations to approve some experiments, reject others or arrange for meetings between the proposers and the laboratory staff.

"Yes" experiments are deemed those whose results will contribute to the true unknowns in particle physics -- the quark search, the search for a particle that could carry the "weak force," study of high energy muons, and the like. A "no" decision may mean that the proposal will not make a contribution of major proportions, but it could also mean that its objectives are part of another, approved experiment, or that it is put into a "deferred" category because other experiments which may have a direct bearing should be done first and those results will determine future priority.

The Program Advisory Committee and Dr. Wilson will continue to review both new and approved proposals. As their store of information increases, from the results of experiments soon to be underway, they will re-evaluate proposals, always seeking to optimize the physics output of the laboratory.

In September alone, 67 visiting experimenters were at NAL full-time, making preliminary preparations; many others come for short periods; a great many wait a go-ahead signal when the accelerator system is operating.

#### ANNOUNCE FORMATION OF NAL ACCELERATOR SECTION

"A unified effort must now be made to bring our synchrotron into operation. To this end, I am forming an Accelerator Section, with myself as Head, by amalgamating the present Operations, Main Ring, Beam Transfer, RF and Accelerator Theory Sections.

"The individuals and the heads of the various sections have done an outstanding, in many cases heroic, job in bringing us to this point where success is within our reach. By now, though, our sectional structure is hindering rather than helping us to our goal. Furthermore, the present effort must be Laboratory-wide and marshal every resource of the Laboratory.

"Please do bear with me and your section heads while we organize the new Section. In doing so we will bend every effort to respect and remember your contributions and at the same time provide you an opportunity for future contribution. Your comments or suggestions for the new Section will be welcome.

"With a more unified approach, I hope to increase the flow of information to you and to provide for a more direct sense of participation in this exciting and important phase of our Laboratory. I am sure I can count on each of you to do his part - to give his best."

R. R. Wilson

## RESERVATIONS ARE DUE NOW FOR THE FILM FESTIVAL

A new social activity for NAL employees and their families and visitors on site will be held on Friday, November 5th. The first "Film Festival" will include a smorgasbord supper that will begin at 6:30 p.m. It is planned by the NALREC committee that this will be the first of a continuing series of classical film showings.

The film to be shown will be "Major Barbara," the satiric comedy by George Bernard Shaw. Stars of the film, which was produced in 1941, are Rex Harrison, Wendy Hiller, Robert Morley, Deborah Kerr and Dame Sybil Thorndike. Directed by Gabriel Pascal, the film also includes dialogue, scenario, and connecting sequences by Mr. Shaw.

The plot is concerned with the idealistic clashes between munitions maker Mr. Undershaft and his pacifist daughter, Barbara -- "Major Barbara" -- a member of the Salvation Army. One recent re-study of the play notes, "...it is a comedy about comedy...an assertion that the whole truth of being and existence is comic and a celebration of that truth...Shaw wrote comedies because comedy articulates the joy of being." The social and individual conflicts which Shaw considers in "Major Barbara" are as timely now as when the play was written.

Reservations for the supper must be made in advance because seating in the cafeteria is limited. Supper tickets are \$3.00. Tickets are also on sale this week at the cafeteria, during the lunch hour.

Movie tickets are \$1.00; they will be on sale in advance or at the door.

For further information, or to make reservations and secure tickets in advance, call Janice Roberts or Fran Pisarek at Ext. 560.

\*\*\*\*\*

## RECENT JAPANESE VISITORS AT NAL

Representatives from NET TV (Nippon Educational Television), Tokyo, Japan, spent three days at NAL recently filming various aspects of the Laboratory for a series of scientific documentaries titled "Reconditioning the Earth." The series, which should be complete by April, 1972, is aimed at providing explanations as to how science has been affecting and will continue to affect the living conditions of mankind.



...T. Nishikiwa, S. Ohnuma, and H. Ohi...

Photo by Tim Fielding, NAL

Among the subjects to be covered in the United States are: control over hurricanes (Miami Beach); Project Plowshare (Nevada); space studies at NASA; and the research and development of the mechanical heart, lung and liver at Jackson, Mississippi; and National Institute of Health, Bethesda, Maryland.

Another group of visitors from Japan recently included staff members of the Japanese 8 GeV Proton Synchrotron Project. Now being built on a 500-acre site 40 miles northeast of Tokyo, the Japanese laboratory will go into operation in 1975. T. Nishikiwa, professor of physics at the University of Tokyo, who will head the accelerator department, headed the group which came to NAL as part of a visit of major U. S. laboratories. He was accompanied by Akemi Naito, who will head the library of the new laboratory, and Hisahiro Ohi, liaison officer for the new laboratory at the Japanese Ministry of Education. Their host at NAL was Shoroku Ohnuma of NAL Accelerator Theory.

\*\*\*\*\*

### RETIREMENT FUND REPORT AVAILABLE

Employees are again reminded that this is the final week in which changes in TIAA-CREF allocations can be made until next July.

Charles F. Marofske, Personnel Manager, advises that anyone interested in a critical evaluation of the CREF retirement fund and a responsive article written by William Slatter, Director of Research for TIAA-CREF, should see the Autumn issue of the AAUP Bulletin. A copy of the Bulletin is available in the NAL Library.

\*\*\*\*\*

### NAL TRANSPORTATION SECTION CHANGES NOW IN EFFECT

All NAL vehicles are now under the supervision of George Doyle of the Plant Services Section at 30 Sauk Boulevard. Problems and inquiries involving these vehicles or transportation to and from the site can be handled by calling Ext. 421. This office will also handle rental and drop-off of Hertz vehicles.

However, government driver's licenses will be issued to employees by Mrs. Dottie Alderton from the Plant Management Office at 43 Feldott Road, Ext. 771.

In addition, any employee who is involved in an accident while driving a government vehicle should notify Mrs. Alderton, or Mrs. Carolyn Hines, also on Ext. 771.

\*\*\*\*\*

### AMATEUR RADIO CLUB TO START CODE & THEORY CLASSES

NAL radio amateurs now plan to begin a class on November 8 which will teach code and theory. The class will prepare men and women who have no knowledge of amateur radio to take the FCC amateur examinations up to and including the Advanced Class (Morse code 13 words per minute and advanced radio theory). The class will be given once a week and will run for about ten weeks. Primary emphasis will be on guidance for study at home. The class will be limited to 20 persons.

This is your chance to become a ham operator. Contact Greg Urban, Ext. 728, for an application.

\*\*\*\*\*

### 8% CAR LOANS AT CREDIT UNION

Car buyers at NAL can secure an 8% true annual interest rate on car loans from the Argonne Credit Union. The bargain loan rate amounts to \$4 per \$100 loaned per year if the loan is repayed in monthly installments. The terms apply to new 1971 models, when 1/2 of the purchase price is financed; on new 1972 cars, when 2/3 of the purchase price is financed.

NAL members are reminded that a Credit Union representative is available for in-person consultation in the Personnel Building, 21 Sauk, on Wednesday afternoons. Telephone inquiries on our service are invited any time on Ext.6-3789. Check withdrawals and most small loans can also be arranged by telephone.

\*\*\*\*\*

CLASSIFIED ADS (Copy for ads must be submitted to Public Information, 35 Blackhawk, before Noon on Mondays.)

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.

SALE-33 Fox-Glove Dr., Woodland Hills, Batavia.  
Oct. 30 & 31. Excellent women's (7-12), children's  
& baby clothing, TV, Furniture, Misc.

FOR SALE-Trk.Camper cap for Fleet Sides 8'L-60"high,  
Top vent w/screen. Jal.side windows w/screens.Inside  
light,paneled,insulated.\$275.Byrd,Ext.421or464-5369.

FOR SALE-'65 Comet-Caliente Conv.,Stick 6, New top,  
clean,\$550 or best offer. John Stoffel, Ext.781.

\*\*\*\*\*

National Accelerator Laboratory  
P.O. Box 500  
Batavia, Illinois 60510

U. S. Postage Paid  
Non-Profit Org.  
PERMIT No. 204  
Batavia, Illinois