

# The Village Crier

 national accelerator laboratory

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## LINAC SETS RECORD FOR WORLD'S HIGHEST ENERGY PROTON BEAM, HOSTS MEETING

NAL was host last week for the 1970 Proton Linear Accelerator Conference with approximately 150 scientists and engineers in attendance from leading physics research institutions in the world. About 40 members of NAL also participated.

The five-day conference included the presentation of nearly two score papers covering a number of technical subjects including: (a) Status of New Proton Linacs; (b) Beam Diagnostic Measurements; (c) Operating Proton Linacs; (d) Superconductivity and RF Structures; (e) Controls; (f) Electrical Engineering; (g) Mechanical Engineering; (h) Beam Dynamics; (i) Heavy-Ion Electron Accelerators; (j) Ion Sources and Pre-accelerators; and (l) Beam Transport and Diagnostic Methods.

Among NAL staff members who were authors of papers presented were Donald Young, head of the Linac section; Robert W. Goodwin, Edward R. Gray, Glenn M. Lee, Michael F. Shea, Cyril D. Curtis, Curtis W. Owen, Donald I. Mendenhall, Russell A. Winje, Hong C. Lau, Anthony R. Donaldson, Maxwell Palmer, Frank J. Mallie, Lawrence J. Sobocki, Arthur E. Skraboly, John E. O'Meara, Edward L. Hubbard, Wilmer C. Martin, Gianmaria Michelassi, Robert E. Peters, Frank M. Krzich, Reid K. Rihel, Elton W. Anderson, Frank L. Mehring, James D. Hogan, Miguel Awaschalom, Peter J. Gollon and Fred Hornstra, Jr.

John M. Dickson, who recently returned to Rutherford High Energy Laboratory in England from NAL, also joined in preparing a paper on the initial performance of the 66-MeV

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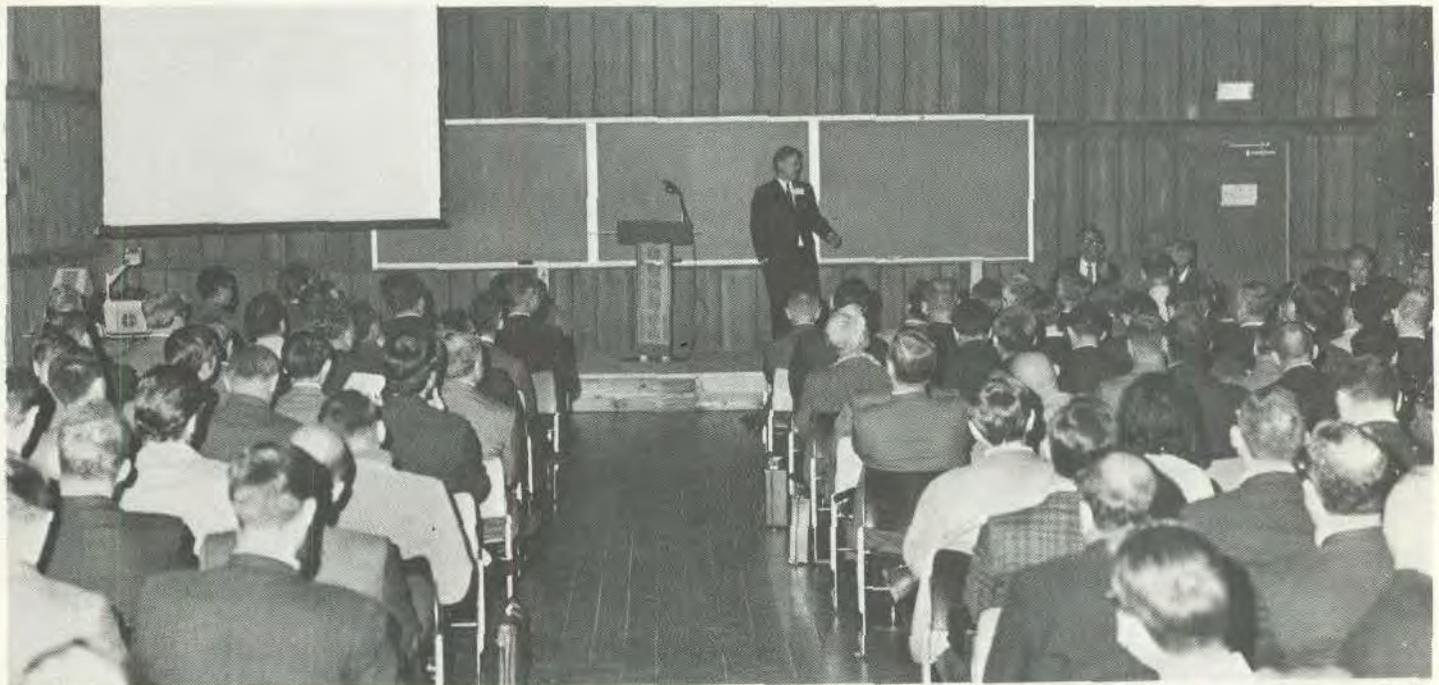


Photo by Tony Frelo, NAL

....RRW speaks to opening session of Proton Linear Accelerator Conference....

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portion of the NAL 200-MeV Linac although he was not able to be present in person.

The conference sessions took place in the Village Barn. It was the first major international technical conference held at NAL. A site tour was conducted for the visitors by NAL's Thomas L. Collins and Francis T. Cole.

At the opening session, held Monday morning, September 28, Robert R. Wilson, NAL Director, greeted the conferees. He told the group that "we are proud of our Linac group: for their many accomplishments, and noted that the Linac section was the first to establish offices and laboratories on the 6,800-acre site. "They were the first to move into our NAL Village and the first section to leave it for the Main Site," Dr. Wilson pointed out.

Dr. Wilson also made the announcement that the Linac section had achieved the goal of accelerating a proton beam through the first six tanks of the Linac to an energy of 139-MeV - - - thus laying claim to NAL being the home of the world's highest energy proton linear accelerator.

Dr. M. Stanley Livingston, former Associate Director of NAL, returned from his Santa Fe, New Mexico retirement home to attend the meetings and to serve as Chairman for the session of Ion Sources and Pre-accelerators.

Participants included representatives of the Chalk River Nuclear Laboratory, Canada; CERN; Cornell University; the Johann Wolfgang Goethe University in Frankfurt, Germany; the University of Heidelberg, Germany; Lawrence Radiation Laboratory; Los Alamos Scientific Laboratory; Central Engineering, Minneapolis; the National Bureau of Standards; the National Science Foundation; Argonne National Laboratory; SLAC; Oak Ridge National Laboratory; Institut de Physique Nucleaire, Orsay, France; Brookhaven National Laboratory; Institut fur Experimentelle Kernphysik, Karlsruhe, West Germany; the University of Tokyo; Indiana University; Physical Sciences Laboratory, Stoughton, Wisconsin; University of Massachusetts; Stanford University; University of Rennes, France; the University of Lyon, France; C.E.A.-Saclay, France and the U.S. Atomic Energy Commission, Washington, D.C. and Batavia, Illinois.

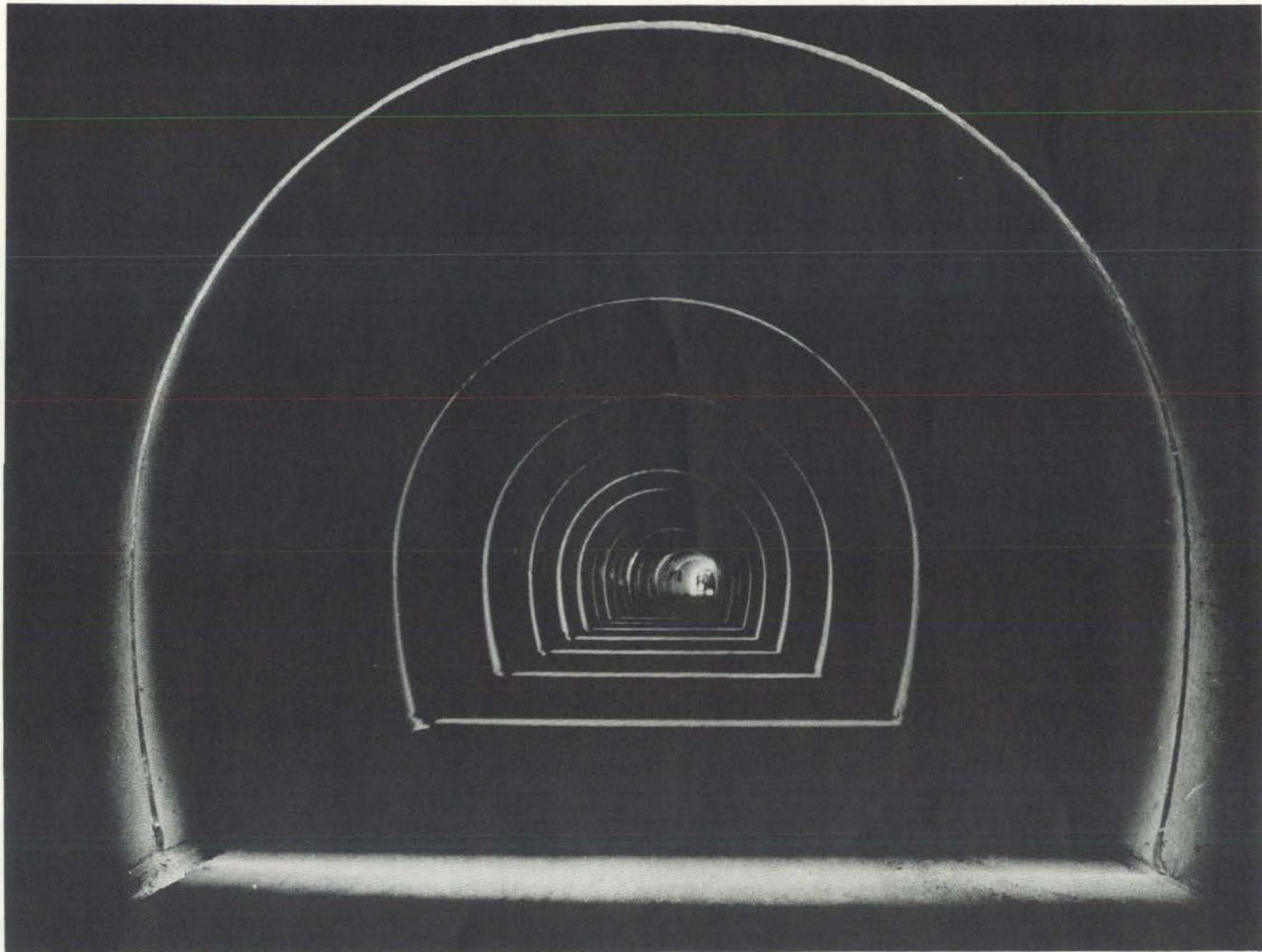
Commenting on the conference at NAL, Don Young stated, "I was pleased that the Laboratory was able to serve as a host to this important technical conference even as we are preparing to enter the final stages of the construction period. Considerable interest in the progress of our Linac section was exhibited by our many distinguished visitors. There was a good and intensive exchange of ideas among the physicists and engineers in attendance and this only can mean a better understanding of the complex technology of Proton Linear Accelerators. I also would like to take this opportunity to thank the many men and women at NAL who helped to make this conference both interesting and meaningful."

The next Proton Linear Accelerator Conference will be held in two years. The location has not yet been chosen.

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A REMINDER: Wilson street, at the north end of the site, is closed to all traffic from 8:00 p.m. to 6:00 a.m. It was closed, for the first time, Thursday night, October 1, and will be closed during those times henceforth. It is closed during the night time hours for employees as well as for general public traffic. Only traffic coming from Batavia -- that is, Eastbound -- along Wilson road to Batavia road will be permitted during the night-time hours and it will be monitored at the Batavia road guard posts to make certain that it is affiliated with NAL activities.

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...Chicago Daily News Photo by Perry Riddle

...THE GRAPHIC ARTS, NATURE, AND SCIENCE MEET: This unusual photo was taken in the tunnel of NAL's Main Accelerator ring on a bright summer day. Rings of light appear where pre-cast concrete sections 9 feet high have yet to be sealed. Soon the tunnel will be covered with earth shielding and the 1970 Indian Summer rays will be gone....

## NAL SITE IS BIRD HAVEN

(The following article was written by Dave Carey, of Experimental Facilities, who, with his wife, Janet, spend much of their leisure time "bird-watching" on the NAL site. If you want more information, you can telephone Dave at Extension 457.)

Just to the east of the Village lies an area where, in the course of a year, one can observe many species of both water and song birds. This area starts with a row of trees on the north, and includes an evaporation pond and large swampy region. It then follows a stream which crosses Batavia Road near the Lab entrance, and includes several more ponds south of the road.



...Black Crowned Night Heron...

In the Spring the ponds are a stopping point during migration for several kinds of waterfowl. Each species will arrive at a certain time, be seen for several days, and then disappear until Fall. Several days later, another species will arrive and do the same. This past Spring we hosted Canada Geese, Mallards, Gadwalls, Shovelers, Blue-Winged Teal, Ring-Necked Ducks, lesser scaup and common Goldeneye. The Wood Duck nests in trees and stays here all summer. After them the most eye-catching are perhaps the Goldeneye, with a large white circular spot on the side of the head.

Herons can be seen all summer in the swampy area and the ponds south of Batavia Road. If one ventures near the swamp north of Batavia Road the chances of flushing out a green heron are excellent. It is the smallest heron on site, about 14" high. One can identify it by its russet neck, spotted on the front, and its bright yellow legs which it holds behind as it flies away. Black-crowned night herons are larger and often fly out of the area at dusk to feed. The most spectacular are the great blue herons which are very slender and reach a height of four feet. All three herons are found in the pond near the Lab entrance within sight of Batavia Road. However, it is advisable to stay in your car lest they all fly away.

Sandpipers are abundant in the swampy area. Here one can find solitary, spotted, pectoral, and semi-palmated sand pipers and lesser yellow legs. A closely-related bird

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Photo by Tim Fielding, NAL

...Dave Carey patiently watches for birds...

NAL SITE IS BIRD HAVEN (Continued from Page 3)

seen throughout the Village is the Killdeer. It has a white head and brownish back and may be identified by the two black bands around its neck and a thin white stripe running the length of the wing, visible during flight. They are famous for their broken wing act when their nests are endangered.

If one is fortunate, one can find other water birds, such as king-fishers, sora, cools, and gallinules. Gallinules nest in the area. They are shaped somewhat like a chicken and have black backs with bright red beaks and a voice which sounds like a bicycle horn. For several weeks in the Spring, black terns are seen skimming over the surface of the evaporation pond. Songbirds are abundant in the trees and underbrush at the edge of the swamp and ponds. Late in the summer the cedar waxwing with its crest and exotic coloration is in great profusion. Kingbirds are often seen chasing other birds many times their size. They are dark birds, with white throats and breasts, a small crest and a white bank at the tip of the tail. Several species of swallow are found perching on wires near the area and flying above the water searching for insects. Also seen are many others including cardinals, goldfinches, and bobolink.

To date, 57 species have been counted in the small area in less than a year of observing. The future will, no doubt, reveal new species and add further interest for birdwatchers.

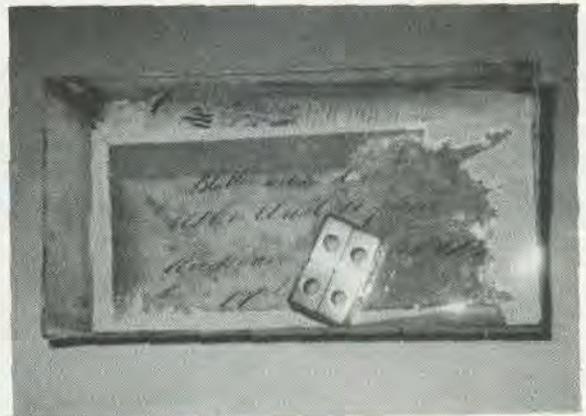
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NAL ASSISTS IN CHURCH CENTENNIAL OBSERVANCE

On Sunday, October 25, the St. Michael's Church of West Chicago will re-set its cornerstone as part of its Centennial observance. The white wooden church was built in 1870 and today stands at the corner of Washington and Sherman Streets in the suburb to the North of NAL. It is affiliated with the United Church of Christ.

The Rev. William Morrisseau is pastor of the church, one of the oldest in the West suburban area. During this year's Centennial activities, the church opened the box enclosed in the cornerstone placed there by the Founding Congregation 100 years ago. It was a record of the small German settlement which joined in establishing the church.

Now members of the Congregation are assembling items that will go back into the box to be placed in the re-set cornerstone. Mrs. Jo Gustafson, Aurora Beacon-News staff writer, who is interested in the history of the area, suggested that NAL should be a part of the contemporary record being put together for the new cornerstone. She communicated with Donald Getz, NAL Assistant Director, who has turned over to Pastor Morrisseau a small rectangular copper object that will fit into the new box. It is a small section of magnet coil, like that used at the National Accelerator Laboratory. The photograph shows the coil section in the box together with some of the documents from 100 years ago.



....NAL coil section in cornerstone

The church was founded before electricity came into common usage; its second generation cornerstone will provide the Congregation of the year 2070 A.D. with a glimpse of what was transpiring among pioneers in the field of Elementary Particle Physics.

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### ARRANGE GYM NIGHTS FOR NAL EMPLOYEES

The NAL Personnel office has arranged for the gymnasium at the West Chicago Junior High School to be available for the use of NAL employees on the first and third Wednesdays of each month from 6:00 p.m. to 9:00 p.m.

Charles Marofske, NAL personnel manager, advises that the facilities are large enough to provide space for basketball, volleyball and general exercise. Shower and locker facilities also will be available.

Basketball or tennis shoes should be worn by all participants to protect the basketball floor and for safety.

The school can be reached from NAL by driving north on Rt. 59 to Joliet Road, then taking Joliet Road to Hazel Street. Turn right on Hazel Street to reach the school.

If you have any questions about this part of the NAL recreation program, please communicate with Bobby McNeal, Ext. 377, or Jim Thompson, Ext. 324.

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### CREDIT UNION NOTES

The Argonne Credit Union has recently prepared a handbook that describes all its operations and services. Copies will be distributed to all NAL employees within a few weeks.

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A number of members have indicated an interest in the CNA/auto insurance plan which permits premiums to be paid out of Credit Union payroll deductions. Arrangements have been made to have a CNA representative spend the afternoon of Thursday, October 15, at NAL to provide counseling and to answer questions regarding this plan. He will be at the Credit Union office, building 22, Sauk from 1:00 p.m. The extension is 225. All interested employees are invited to call or visit at that time.

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**SWIMMING POOL TO CLOSE:** The swimming pool in the NAL Village will be closed for the 1970 season on Sunday afternoon, October 11. It will be open to swimmers on Saturday, October 10, and Sunday until 5:00 p.m. Rudy Dorner, site manager, expects to re-open the pool in early May of next year.

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### CLASSIFIED ADS

**FOR SALE** - Matching Admiral refrigerator with large lower freezer compartment and 30" gas range, both copper-tone in color. Excellent cond. Best offer over \$150. Contact Dan at NAL switchboard between 12:00 and 8:00 a.m. or 896-0105 days.

**FOR SALE** - 10 Speed Schwinn bike men's with fenders and light. Excellent condition. \$55. Call J. Simon, Ext. 541.

**FOUND** - Prescription eyeglasses at Village Barn during Linac Conference. Please claim at Public Information Office, NAL Village.

**FOR SALE** - set (2) studded snow tires, size 700 x 13 w.w. mounted on Chrysler wheels, used 3 mos. only on '64 Dodge Dart. \$50. Can be used on Darts & Valiants thru '63. Call 879-2900 Ext. 211. Bill Johncox. Also for sale ½ midget trailer (rail type) with leaf springs - small wheels - can be converted to transport motorcycles or snowmobile. \$50.

**FREE** - 2 black kittens - Gloria Beck - 346.

**FREE** - Small terrier, female, housebroken, 3 years old, very friendly. Call Dottie, Ext. 307.

**National Accelerator Laboratory**

**P.O. Box 500**

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