The Village Crier

national accelerator laboratory

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

VILLAGE CRIER — Vol. 1 No. 4 September, 1969

The Committee

By Robert Rathbun Wilson

Late last fall, I sent around the following announcement:
NAL EMPLOYEES:

I have for some time been concerned about what might be called a problem in communication. Scientists and Engineers seem to feel free to present their ideas and problems directly to me, but I have been concerned that other employees of the Laboratory, however I might encourage them to do so, would hesitate to come directly to me about various problems which they have or may see developing. I worry that I may never hear of a problem at all, or that if it is brought up through normal channels, it may get so watered down that by the time it comes to me I will not even understand what the initial difficulty was. It is also true that people tend to put up with minor but irritating annoyances just because individually the problem seems too trivial to complain about.

In order to have a direct interaction, and because I would like to meet and get to know as many people who work at the Laboratory as possible, I have set up what I would like to call "The Committee", with whom I will have regular meetings. The idea is to have a small group of employees meet with me once a month as individuals to talk about anything which they might want to bring up. Perhaps in this way we can anticipate some of the problems that will inevitably develop in a large laboratory. Who knows, we might even be able to do something about some of the problems. The meeting will also give me an opportunity to try to explain some of my ideas about plans and policies of the Laboratory.

Members of The Committee will be chosen on the basis of employment seniority, for a six-month term, with the terms of the initial committee staggered to establish a system of rotating membership. For the purposes of selection I have divided the Laboratory rather arbitrarily into six groups, but each member should consider that he is representing himself and not that he is a spokesman for a particular group. Membership is not compulsory and if someone does not feel like serving, for whatever reason, then we will simply choose the next person on the list."

* * *

I have met many times with The Committee, and I am sure it has served quite a useful function. I also think that many employees of the laboratory are not aware of the existence of The Committee or at least do not know who is on it.

Some of the recommendations that have been made by The Committee include: the regular publication of a Laboratory newspaper, performance review of weekly employees twice a year instead of once, provision of suggestion boxes for either anonymous or signed suggestions.

We have accepted all of these recommendations and have acted upon them.

The Committee has agreed that the membership should be publicized in our newspaper. The present membership (September, 1969) is listed below:

Alvin Tanner, senior technical aide, Main Accelerator; who began employment at NAL April 1, 1968; he will serve on The Committee until October 30, 1969.

Robert Krischel, driver, Material Services; who began employment here September 11, 1967; he will serve on the Committee until October 30, 1969.

Jan Wildenradt, senior technical aide, Linac; who began employment at NAL December 14, 1967; will serve on The Committee until November 30, 1969.

Leno Mapalo, senior design draftsman, Booster; began employment March 4, 1968; will serve on The Committee until December 30, 1969.

James Buffenmyer, model maker, Technical Services; began employment November 6, 1967; will serve on The Committee until December 31, 1969.

Margaret Kasak, secretary, Linac; began employment August 28, 1967; will serve on The Committee until February 28, 1970.

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(Photographs of the five members of The Committee appear on Page 21 of this issue of The Village Crier.)

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James Sanford Joins NAL

The appointment of Dr. James R. Sanford as head of the Experimental Facilities Section at NAL was announced during the summer.

Sanford came to NAL from the Brookhaven National Laboratory, in New York, where he had served successively as assistant physicist, associate physicist and physicist since 1962.

Sanford was the first chairman of the NAL Users' Organization, which today has nearly 1,000 members. It is composed of physicists who are interested in the development of NAL and in the possibilities of conducting research at the Laboratory when the accelerator system is completed.

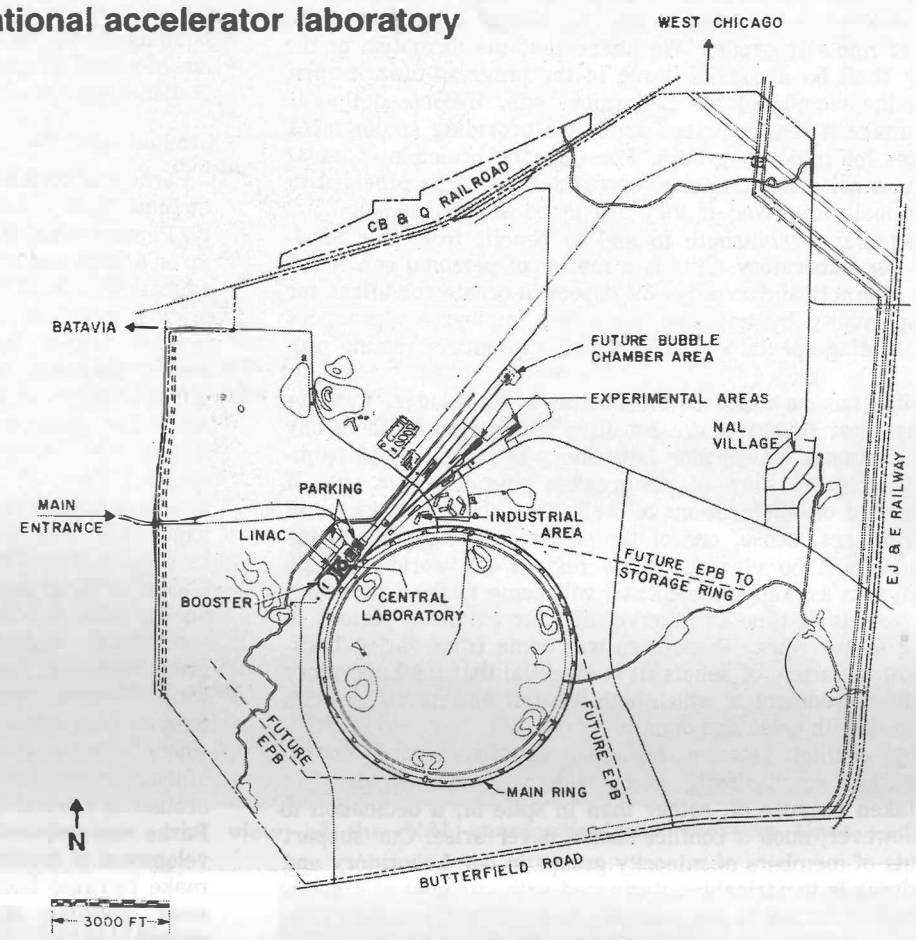
Dr. Sanford received his bachelor's degree at Oberlin College, Ohio, in 1955, He received his master's degree and doctorate in physics at Yale University in 1957 and 1961, respectively.

James R. Sanford

Dr. Sanford holds memberships in the American Physical Society, the American Association for the Advancement of Physics, Sigma Xi and other learned societies.

A native of Zanesville, Ohio, Dr. Sanford is married to the former Mary Katherine Moyer. They have two daughters, Susan E., 11, and Elizabeth A., 9. The Sanfords now reside at 739 Dow Street, Geneva.

national accelerator laboratory



6-1-69

MASTER PLAN OF THE
NATIONAL ACCELERATOR LABORATORY

Operated by the Universities Research Association Inc. for the U.S. Atomic Energy Commission.

The accelerator being developed and constructed at the National Accelerator Laboratory will be, when completed, the highest energy machine in the world. It will produce protons of 200 Billion Electron Volts (and eventually 400 BeV) energy.

The machine is an alternating gradient proton synchroton of very large orbital radius.

A new conceptual layout of the external beams and experimental areas has been developed following the work of last year's Summer Study.

Shown above is a general master plan of the NAL site, incorporating the new ideas. The site covers 6,800 acres or roughly 10 square miles.

NAL Receives Full Authorization

By Carl W. Larsen

The end of a busy, productive and historic summer is approaching at NAL — and a fruitful Fall is nearing.

The most significant news for the NAL family over the summer was the fact that President Nixon had signed the U. S. Atomic Energy Commission's authorization bill passed by Congress.

This bill contains authorization for the AEC to commit, over the years, the full $250,000,000 that it has been estimated will be required to construct the National Accelerator Laboratory.

The President signed the bill into law July 11, 1969. Earlier, the U. S. House of Representatives had voted to authorize $217,667,000 in new funds for NAL's development and completion. The bill then went to the Senate, which also approved it. The $217,667,000, with funds authorized earlier for NALs "start-up," brought the authorization total to $250,000,000. This is good news, but the amount of money which will actually be available for our use depends on

Continued on Page 3

Award Utility, Main Ring Contracts

Several major contracts have been awarded in recent months for significant components of the National Accelerator Laboratory on the NAL 6,800 acre site in DuPage and Kane counties of northeastern Illinois.

Three contracts totalling $5,443,410 were let in late August and early September. One was for a start on construction of the NAL main accelerator, which will be 1.24 miles in diameter when completed. The other two contracts were for construction of the central utility plant and for the industrial area buildings.

On August 29, Herlihy Mid-Continent Company, of 407 South Dearborn Street, Chicago, Illinois, was awarded the contract to construct the Central Utility plant. The initial award was for $1,320,800.

The contract for construction of one-sixth of the Main Ring was awarded to a joint venture comprised of Schless Construction Co., Inc., of Batavia, and Thomas

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WE'RE BACK

This is the first issue of the Village Crier since early June. During the long, summer vacation, a considerable amount of news and photographs piled up in the Crier's office. Henceforth, the Crier aims to publish once a month. We hope to be in your mail-box by mid-month. Please remember us if you have any information to communicate among the NAL family.

Summer Study Attracts 100 Physicists

The second NAL Summer Study was held this year at Aspen, Colorado, from June 9 to August 2.

About one hundred high energy physicists took part. Most of these participants are prospective users of the future research facilities at NAL, and represent many universities and national laboratories throughout the United States.

About fifteen NAL physicists took part in the Summer Study, including Robert Wilson, Director of NAL, and Edwin L. Goldwasser, Deputy Director of NAL. Goldwasser was Director of the Summer Study Program.

The National Accelerator Laboratory research facilities will be available for use for the entire physics community in the United States. The research experiments selected to be carried out will be chosen on the basis of the scientific merit of the proposed experiments and of the competence and experience of the scientists involved. In discussing the summer study program, Edwin L. Goldwasser, Deputy Director of NAL, said, "It is planned that about 75% of the research program will be carried out by visiting scientists, 'users.'

"Within this context, it is essential that the Laboratory keep the user community informed of its developing plans so that scientists can formulate their research plans in a way that will be compatible with the facilities that we are continuously developing. Conversely, it is important

Continued on Page 24

Policy Statement on Human Rights

The following Policy Statement on Human Rights was issued March 15, 1968, by Robert Rathbun Wilson, director, National Accelerator Laboratory, and Edwin L. Goldwasser, deputy director:

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It will be the policy of the National Accelerator Laboratory to seek the achievement of its scientific goals within a framework of equal employment opportunity and of a deep dedication to the fundamental tenets of human rights and dignity.

We have seen the creation of NAL near Chicago in a year of social tension and urban unrest, and we have observed the destiny of our Laboratory to be linked to the long history of neglect of the problems of minority groups. We intend that the formation of the Laboratory shall be a positive force in the progress toward open housing in the vicinity of the Laboratory site. We intend that it shall also make a real contribution toward providing employment opportunities for minority groups. For this, the principle of equal opportunity is not enough. Special opportunity must be provided to the educationally deprived if they are to be able to exploit their inherent potental to contrbute to and to benefit from the development of our Laboratory. This is a matter of personal conviction as well as of practical necessity. We expect to create conditions for special opportunity by adopting agressive employment practices and by instituting special educational and apprentice training programs.

Prejudice has no place in the pursuit of knowledge. Perhaps this is why most scientists are sensitive to discrimination in any form. The National Accelerator Laboratory is in a position to attract to its program some of the greatest physicists, not only of this country but of other nations as well. Thus the Laboratory will be, in a very real sense, one of the windows through which the United States will be viewed by the rest of the world. Foreign visitors, laymen as well as scientists, will come to the Laboratory for short periods of time to observe, and for extended periods to participate in our work. These men will come from varied backgrounds with a variety of beliefs. It is essential that the Laboratory provide an environment in which both its staff and its visitors can live and work with pride and dignity.

In any conflict between technical expediency and human rights we shall stand firmly on the side of human rights. This stand is taken because of, rather than in spite of, a dedication to science. However, such a conflict should never arise. Our support of the rights of members of minority groups in our Laboratory and in its environs is inextricably intertwined with our goal of creating n new center of technical and scientific excellence. The latter cannot be achieved unless we are successful in the former.

A Reminder of NAL's Commitment . . .

The following statement to all NAL and DUSAF staff members was issued June 27, 1969, by Robert Rathbun Wilson, NAL director:

The story of the National Accelerator Laboratory has in many ways been interwoven with the national struggle over minority rights and opportunities. At the time of the choice of the site of the Laboratory, we were used as a political lever with which to influence the passage of an open housing statute for the State of Illinois. Unfortunately that attempt was unsuccessful. Since then, at our own initiative, we have involved ourselves in a variety of ways in attempts to contribute to the solution of many of the pressing problems of members of minority groups. We have been particularly active in providing training and employment opportunities for these people. We do this because of a commitment to the principle of racial justice; and we do it also because of a belief that society is threatened because of past inequities which still adversely affect members of minority groups today.

About a year ago, so that there should be no doubts about our position on these matters inside the Laboratory or out, Ned Goldwasser and I promulgated a Policy Statement on Human Rights, which is printed on the back of this letter.

Our Laboratory is growing rapidly. Only a handful of people were in our employ that first summer at Oak Brook when we actively supported the fight for an open-housing law. Two hundred more people joined our staff between that summer and the time when the Statement was written. Two hundred more have been employed since then.

I am writing this letter now as a reminder of this commitment to those who have been with NAL or with DUSAF for a long time. It is also written to insure that new employees also understand this policy.

I very much appreciate the cooperation that has been forthcoming from essentially all Laboratory and DUSAF staff members in implementing the programs that have been undertaken. I am proud of the innovations and the very real progress that we have made. However, we must do much more. It will take effort and will and sacrifice on the part of every one of us if we are to be successful in this respect. I beg each of you to give thought to your own responsibility and to work to see to it that we make our program a success.

Plan Road Work Near NAL

Work is proceeding on a multi-million dollar program to repair and upgrade various highways in the vicinity of the NAL site.

The state of Illinois highway department district office in Elgin is developing plans to widen Route 59 to four lanes from Route 64 (North avenue) to the East-West Tollway.

The Kane county highway department, under the direction of William Carter, and the DuPage County highway department, under the direction of Ronald Dold, are developing plans for widening and improving other roads in the vicinity of the Laboratory. Sigmund Ziejewski, district engineer for the state division of highways, is co-ordinating the efforts.

It is expected that contracts will be let this winter to widen Averill road, from Kirk road to Highway 25 along the Fox River, to 26 feet. A three-inch bituminous mat is planned for this portion next Spring.

In addition, plans are being made to pave and to improve Averill-Barton road from Kirk road eastward to an entrance on Alternate 30 (Roosevelt Road). This work probably will begin next Spring. Meantime, plans are being made to acquire a right-of-way for this improvement that will provide long-range for a four-lane Averill-Barton road.

Parke Rohrer: DUSAF's On-Site Boss

by Helen Severance

E. Parke Rohrer, Project Manager for DUSAF, has the distinction of managing what the Engineering News Record has said is "the engineering challenge of the century." There are not many men who have an opportunity to supervise the design and construction of the large and varied buildings and enclosures for a one-of-a-kind project such as the National Accelerator Laboratory.

E. Parke Rohrer

Graduate of NYU

Parke was born on June 22, 1924 in Lime Valley, Lancaster County, Pennsylvania. He was brought up on a farm and his first taste of education came in a one-room red brick schoolhouse where the same teacher taught for over sixty years, spanning several generations of pupils in many families. After he graduated from high school, the Army Air Corps claimed him for three years where he supervised the maintenance of automatic pilots. In 1946 he entered New York University, College of Engineering, receiving his Bachelor of Science degree in mechanical engineering. Upon graduation, he took a position with the Armstrong Cork Company of Lancaster, Pennsylvania, where he helped develop the manufacturing equipment to make acoustical tile and other products. Parke was responsible for the development of the first machine to make terrazzo floor covering, a most unusual and interesting project.

Joined DMJM 1961

Relocating in Reading, Pennsylvania, Parke established his own consulting firm of mechanical and electrical engineering services which he operated for three years until he became general supervisor of design and facility engineering for Rohr Aircraft Corporation located in the warmer climate of Riverside, California. In 1961 he joined the firm of Daniel, Mann, Johnson and Mendenhall (DMJM), domestic and international consultants in planning, architecture, engineering, systems and economics as their Far East Asia Operations Manager in Tokyo.

5 Years in Far East

The Rohrer family spent five years in Japan where Parke was responsible for approximately $270 million in major planning programs; $170 million in engineering design work and supervised $160 million in construction of 30 key defense projects for the U. S. Army Corps of Engineers, all of which involved close coordination and surveillance of the architectural and engineering disciplines. He has also served on DMJM teams responsible for such major projects as the pump design for the California Aqueduct system which will lift water 2,000 feet over the Tehachapi Mountains and a research and development center for Communications Satellite Corporation in Maryland. But, he admits the NAL project is the most interesting he has ever worked on. "Two projects that I am looking forward to with great anticipation are the further development of the central laboratory building and the experimental areas", he stated.

Heads DUSAF Staff

Because of Parke's wide background, especially in design and engineering management, Irvan F. Mendenhall, President of DMJM, highly recommended him as Project Manager for DUSAF Having been interviewed and accepted by Dr. Wilson and Colonel William D. Alexander, partner in the firm of Seelye, Stevenson, Value & Knecht, and also accepted by the top management of the joint venture firms, Parke assumed his duties as Project Manager in January 1968. As such, he is responsible for the day-to-day operation of DUSAF in the design and construction of the National Accelerator Laboratory conventional facilities. The DUSAF staff now numbers approximately 170 and is comprised of senior members of the firms involved, former employees who have worked on various projects all over the world and local engineers and architects. DUSAF is international in scope and employment with just about every nationality imaginable represented, and it strives to be an integrated well-functioning composite of all members of the joint venture.

Family Designers

Parke and his wife, the former Janette Valk, live in Wheaton, Illinois, with their five active children Roselind, 16; Jonathen, 14; David, 12; Daniel, 8 and Steven, 3 who boasts of being the only one in the family of Japanese citizenship, having been born in Tachikawa, apan! Rosalind and her mother, a graduate of New York University, College of Education, display unusual talents in designing and making many of their own clothes. The entire family is enthusiastic about camping having camped from New York to California, concentrating on the Yellowstone Park area, upon their return from Japan in 1966. David must have inherited some engineering-architectural genes from his father - in a recent Wheaton-Glen Ellyn soap box derby he won first prize for the best-designed soap box racer which is now on display in the Rohrer family room! Naturally, it was called THE ACCELERATOR - 200 BEV!

Coordination Vital

A nine to ten hour workday is typical in the life of the Project Manager, starting in the morning with the logging in of the past day's events and laying out the activities for the day, which include checking on the latest problems and changes in the design division. Every other day Parke tours the construction site keeping up with that phase of the project. As one might expect, the coordination of such an undertaking depends a great deal on communication between many groups. Parke attends NAL meetings and holds his own division and staff meetings with the four divisions of DUSAF: engineering/architectural, administrative /finance, projects division construction and the Equal Employment Opportunity Department. The last item of the day consists of taking care of the mail and, long after most people have left the Village, Parke Rohrer is preparing for the next day's events.

Now V.P. of DMJM

A member of the Far East Society of Architects and Engineers, the National Society of Professional Engineers and the American Society of Mechanical Engineers, Parke was recently named Vice President of DMJM. When the Laboratory project is completed, he may be in the home office of DMJM in California or possibly manage one of the many regional offices in another part of the world. In this period of building for the future, the administrative and technical talents of E. Parke Rohrer will doubtlessly be in demand wherever he chooses to go.

The 200 BEV Special parked outside the Rohrer home in Wheaton with (L to R) David, Daniel and Steven Rohrer proudly displaying the winning trophy.

Hildebrand Named Dean At Chicago

Roger H. Hildebrand, professor in the department of physics and in the Enrico Fermi Institute, has been appointed Dean of the College of the University of Chicago. He is a member of the policy advisory committee at NAL.

NAL Village Crier

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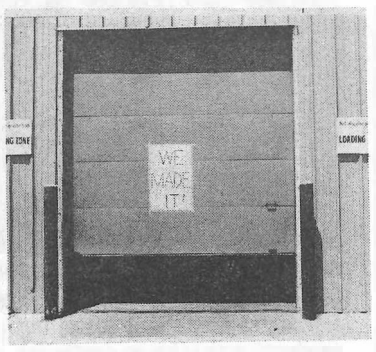
NAL Gains Full Authorization

(Continued from Page 1)

the appropriation.

As the first weeks of September ended, Congress still was considering final action on the AEC appropriation bill covering Fiscal Year 1970, which began July 1. In his budget message, President Nixon earlier had asked Congress to appropriate $96,000,000 for construction work at NAL in Fiscal 1970. Meantime, NAL has been operating on moneys made available to it by AEC under the Congressional "continuing resolution." A total of $5,343,000 in new funds was made available during July for construction. Most of this money was committed for Linac technical components. In August, NAL received $7,640,000 from the AEC and in September it will get $7,481,000.

More than 100 physicists attended the NAL summer study at Aspen, Colorado, during June and July. A delegation from NAL visited Russia for a conference on accelerators. Scores of men and women — scientists and non-scientists — visited the NAL site during the summer.



Linac is on the beam . . . .

Linac Beam Successful

The Linac group, which had been working feverishly on its effort, recorded a proton beam accelerated to an energy of 10 MeV (million electron volts) in a prototype linear-accelerator cavity situated in the temporary Linac research and development building in the NAL village. Acceleration of the protons to 10 MeV was achieved on the scheduled date.

In the words of NAL's monthly report for June, 1969:

"The last days and weeks of the effort to reach this milestone form a saga. . .There were many problems with severe arcing in the pre-accelerator, largely across the limiting resistor between the high-voltage power supply and the high-voltage electrode. The unusually high humidity of the last month (June) was undoubtedly a contributing factor to the arcing. In the last few days, the high-voltage supply was moved to increase the distance between the two electrodes, the limiting and measuring resistors completely rebuilt and installed, and a borrowed 5-ton air conditioning unit installed to lower the humidity."

Arcing Corrected

It was observed then that the arcing was occurring in the sulfur-hexafluoride gas inside the pressure vessel insulating the accelerator column. It was found that the last gap in the column was nearly shorted. This gap was shorted completely and the sulfur-hexafluoride, which had deteriorated, replaced. After five hours of voltage conditioning, it was then possible to achieve 705 kV on the remaining gaps of the column. This voltage was above the threshold for capture and acceleration in the linac.

The beam trace was the first record of 10 MeV protons at the Laboratory. It corresponds to approximately 5 microamperes of accelerated proton beam.

10 MeV Birthday Party

The Linac and Booster sections held an informal celebration of the "birth of the 10 MeV beam" in the NAL cafeteria Saturday, June 28, 1969. There was a photo display showing pictorial progress.

The Linac group is headed by Donald Young, a physicist who received his doctorate at the University of Minnesota and who helped to develop the 68 MeV linear accelerator there. Young and his family reside in Downers Grove.

Techniques Checked

The 10 MeV prototype cavity was built to check out fabrication techniques and to provide operating experience with other prototype systems necessary for the final design of what will be a 200 MeV scheduled to be operating in February, 1971.

Linac Construction

Work on construction of the linear accelerator enclosure, which began last December 1, is proceeding on the NAL site. The excavation and most of the concrete work for the linac enclosure have been completed. The linac building is now more than 50 per cent complete. It is scheduled for final completion December 27, 1969.

Footprint Area

Meantime, work also is proceeding at the NAL "footprint" area on the Booster enclosure. This building is about 30 per cent complete. More than one-fourth of the tunnel is completed and another fourth is formed and ready to be filled with concrete. The entire booster enclosure is under contract. This building is scheduled for partial occupancy on February 26, 1970, and it should be completed by April 2, 1970.

Cross Gallery

Work on the Cross Gallery began in July and is now about 10 per cent complete. This building phase is to be finished February 13, 1970.

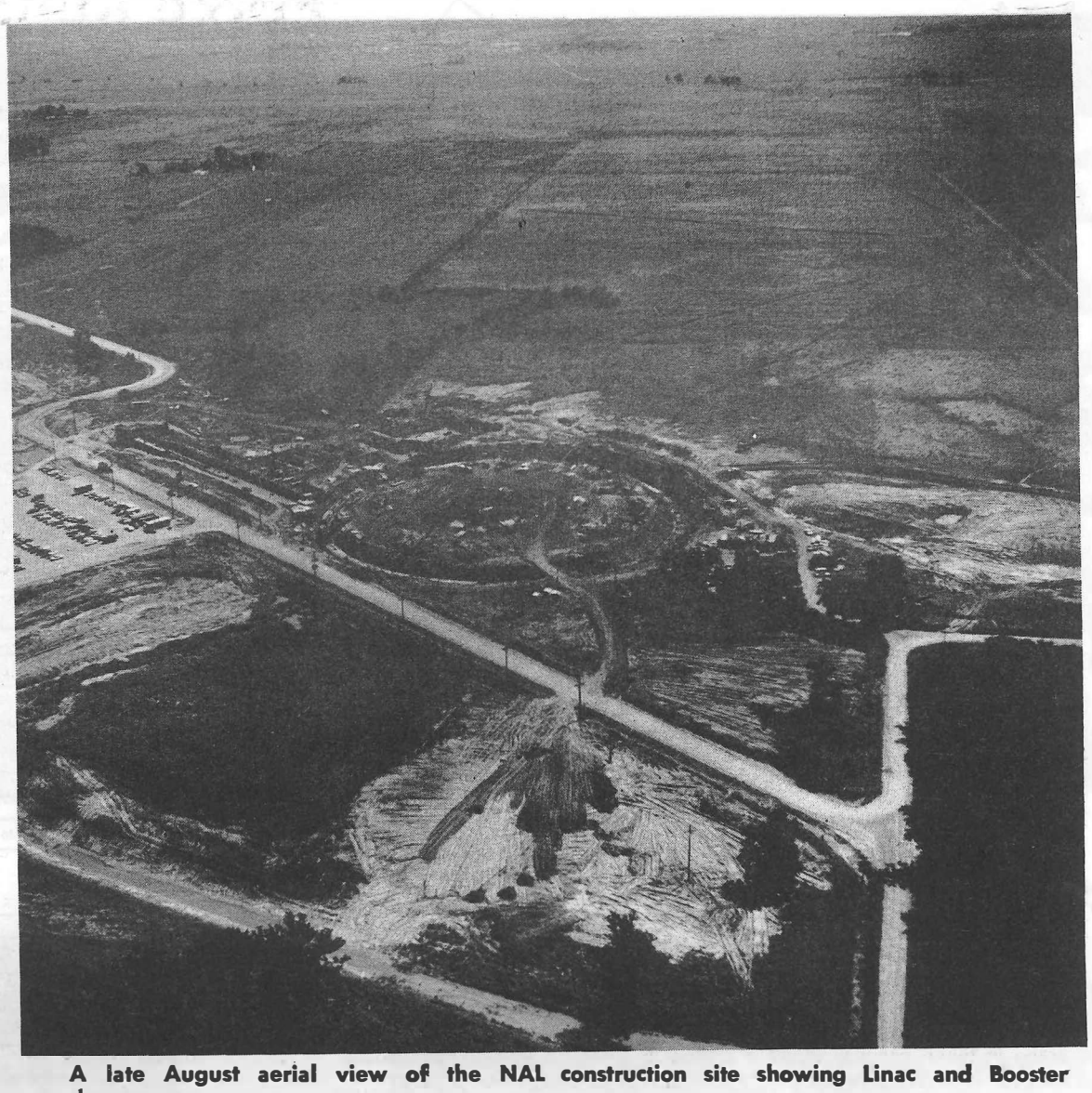
Road Work

Major roads for the Laboratory are being built across what once were corn fields and plans are being completed to close off, except for peak hours, some of the roads which bisect the 6,800-acre NAL site. Gates have been installed on these roadways in the last few weeks.

On July 31, DUSAF moved all of its architect-engineering operations from rented quarters in Hinsdale. The DUSAF staff is occupying a number of buildings in the Village and some renovated farm buildings along Batavia Road near the "footprint" area. What once was a church, on Wilson Road, has been converted for use by some of the DUSAF staff.

New Personnel

The increased activity at NAL also prompted the need for additional personnel. It was reported that, as of September 9, the Laboratory had a total of 490 men and women on its direct staff. This figure, of course, did not include totals for DUSAF, the architect-engineers, or for the various contractors and sub-contractors concerned with the millions of dollars in construction taking place at the NAL accelerator system site.



A late August aerial view of the NAL construction site showing Linac and Booster enclosures.

Award Utility, Main Ring Contracts

(Continued from Page 1)

M. Madden Company, of Chicago, for $3,428,917 on August 29.

On September 3, Wil-Freds, Inc., of Naperville, received the contract for construction of the industrial area buildings for $693,-693.

DUSAF Awards

Following is a list of contracts awarded recently for more than $50,000 by Daniel, Urbahn, Seelye and Fuller (DUSAF), the joint venture concerned with conventional architect-engineering of the National Accelerator Laboratory's development:

Purpose: Main Accelerator Enclosure Prototype
Amount: $130,612
Subcontractor: Englehardt, Inc., Mundelein, Illinois

* * *

Purpose: Site grading, rough roads and drainage
Amount: $626,005
Subcontractor: Palumbo Excavating Co., Hillside, Illinois

* * *

Purpose: Linear Accelerator Enclosure
Amount: $1,839,659
Subcontractor; The Schless Construction Co., Batavia, Illinois

* * *

Purpose: Booster Enclosure Prototype
Amount: $115,648
Subcontractor: John Mohr & Sons, Chicago, Illinois

* * *

Purpose: Booster Accelerator
Amount: $2,320,515
Subcontractor: Herlihy Mid-Continent, Chicago, Illinois

* * *

Purpose: Cross Gallery
Amount: $616,098
Subcontractor: The Schless Construction Co., Inc., Batavia, Illinois

* * *

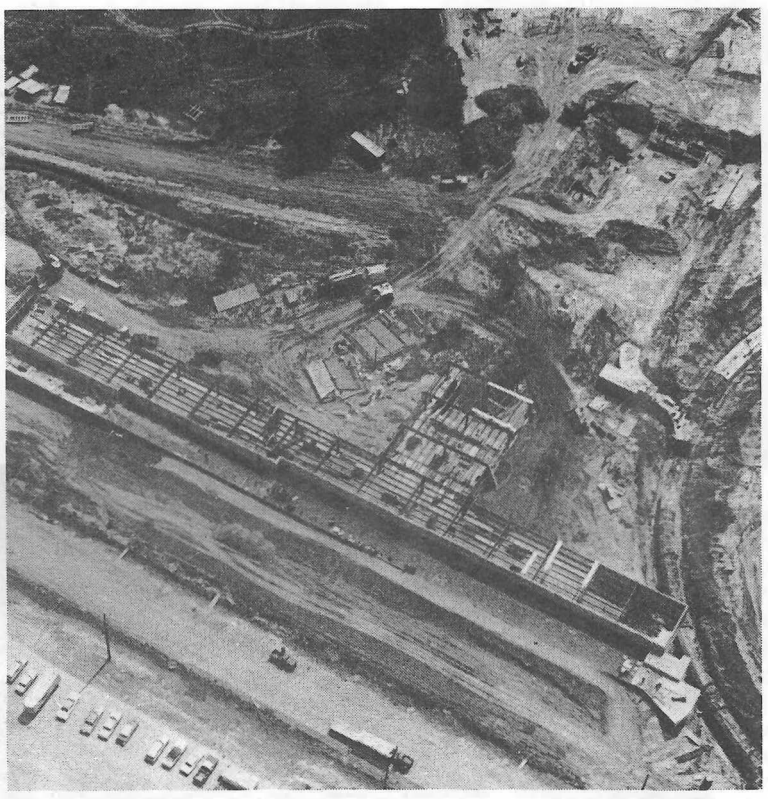
Purpose: Industrial Area Buildings — Phase 1
Amount: $693,693
Subcontractor: Wil-Freds, Inc., Naperville, Illinois

* * *

Purpose: Main Accelerator — Phase 1
Amount: $3,428,917
Subcontractor: Schless-Madden Co., Inc., Batavia, Illinois

* * *

Purpose: Industrial Area Roads
Amount: $113,356
Subcontractor: R. W. Dunteman, Bensenville, Illinois



Work on the Linac enclosure proceeds three miles northwest of the NAL village.

Invitations for Bid were issued by DUSAF during the week of September 15th, with bid opening about September 29, 1969, for Footprint (Industrial Cold Water Main), (Domestic Water Main), and Sanitary Sewer with a Pre-bid Conference on September 19, 1969.

DUSAF proposes to issue invitations for bid about September 29, 1969, with bid opening about October 23, 1969 for Phase II of the Industrial Area Buildings. In general, the building construction work consists of three (3) buildings with connecting enclosed passages. The Pre-Bid conference is scheduled for October 10, 1969.

About September 22, 1969, an invitation for Bid will be issued for Phase II of the Main Accelerator which, in general, includes a portion of the Main Ring enclosure, 23 buildings, Radio Frequency building, major vehicle access building, two minor vehicle accessways, underground utiltiies, all electrical power feeders and yard substations, construction and paving of new access roads and tree-planting along Main Accelerator enclosure. The approximate total cost will be between $10,000,000 and $15,000,000. A Pre-bid Conference for the above is scheduled for October 14, 1969.

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NAL's telephone switchboard (AC 312-231-6600) will be opened from 7:30 a.m. through 12:30 a.m. Monday through Friday, except for holidays. During these hours, the switchboard will be manned by an operator.

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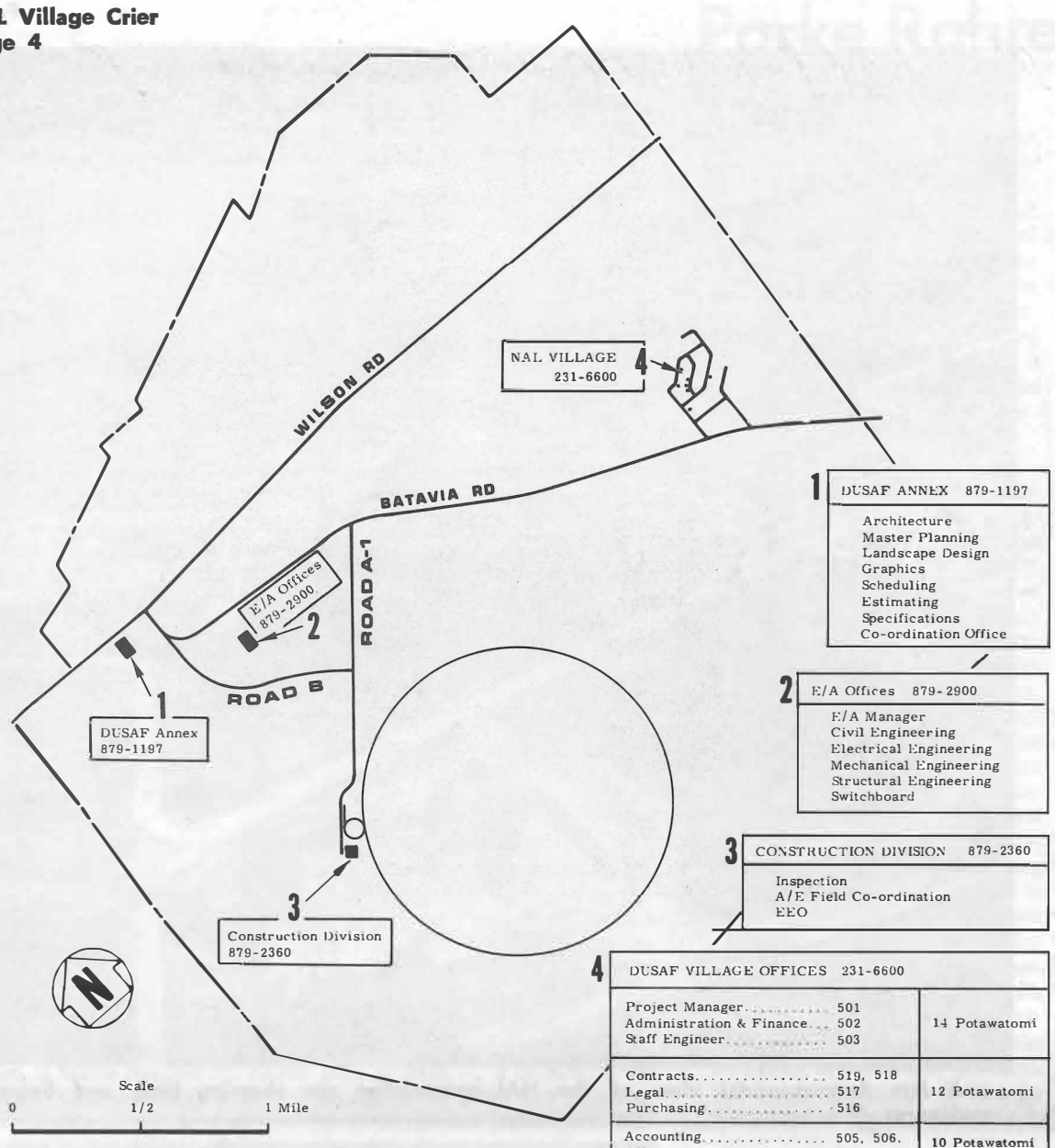
The second and fourth Monday of each at 12 noon has been designated as the testing time for the NAL fire siren.



1 DUSAF ANNEX 879-1197

Architecture
Master Planning
Landscape Design
Graphics
Scheduling
Estimating
Specifications
Co-ordination Office

2 E/A Offices 879-2900

E/A Manager
Civil Engineering
Electrical Engineering
Mechanical Engineering
Structural Engineering
Switchboard

3 CONSTRUCTION DIVISION 879-2360

Inspection
A/E Field Co-ordination
EEO

4 DUSAF VILLAGE OFFICES 231-6600

Project Manager Administration & Finance Staff Engineer	501 502 503	14 Potawatomi
Contracts Legal Purchasing	519, 518 517 516	12 Potawatomi
Accounting Office Services	505, 506, 507	10 Potawatomi
Liaison	342	21 Shabbona
Project Engineering	396	21 Sauk
Personnel Computer Applications	500, 509 511, 512	19 Neuqua
Surveying	345	13 Neuqua

POST OFFICE BOX 800 BATAVIA, ILLINOIS 60510

Location of DUSAF offices

DUSAF

Daniel, Urbahn, Seelye & Fuller

DUSAF is a joint venture of four firms: Daniel, Mann, Johnson and Mendenhall; the office of Max O. Urbahn; Seelye Stevenson Value & Knecht, Inc.; George A. Fuller Company.

DUSAF Moves To NAL Site

DUSAF's long awaited move has now been accomplished. Over 100 engineers and architects packed all their gear at 15 Spinning Wheel Road in Hinsdale on the last day of July for the movers. The new "home" for DUSAF is "The Farm," the former Phillips farm on Batavia Road west of Feldott Road.

DUSAF had planned to complete the move in two days; however, the moving company soon found that they had under-estimated their job. The move was finally completed by NAL, using their own trucks, in a total of five days. Locating vital items misplaced during the move added lively interest to DUSAF's first days "on the farm." Installing telephones, completing air conditioning systems and installing reproduction machines continues.

The new offices occupy a two story structure formerly used for square dancing which has been renovated as a drafting area. A new "pole building," similar to NAL Cafeteria, is under construction to provide needed additional space for the DUSAF architects, specification writers, and estimators. These activities are temporarily located in a former church building on Wilson Road.

Other elements of DUSAF, temporarily located in NAL Village until quarters can be provided at The Farm, include the Project Manager, the Projects Division, and the Administration and Finance Division. The DUSAF Construction Division continues to occupy the former Schimelpfening Farm, the corner of Giese and Kautz Roads.

DUSAF Personals

VACATIONERS

John Trommerhausser is vacationing and enjoying the sunshine in Florida this week.

Parke Rohrer and his family of five children enjoyed the area around Pt. Pleasant Beach, New Jersey.

Dolores Snodgrass spent last week golfing and swimming at Torch Lake, Michigan.

Dolores Mullins went fishing and swimming at St. Germaine, Wisconsin.

Billie Leonard stayed home and enjoyed the local sights.

WORLD TRAVELERS

Allen Cheng just returned from a month's vacation in the Far East.

Gene Clements is back from Europe where he has been for two months.

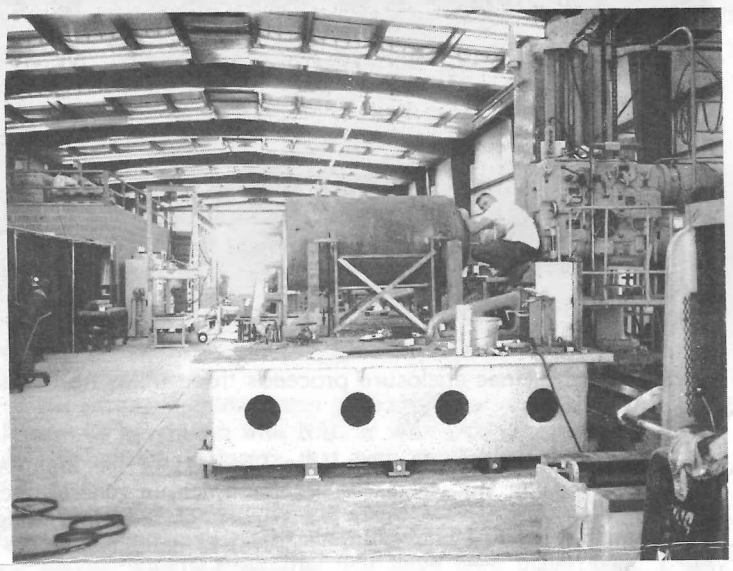
George Eliopuolos recently visited Greece. Now in Greece are Aris Tsapras and Christ Demopoulos. Kurt Schneider's wife is leaving for Greece shortly and will visit with the Tsapras family there.

Lou Bolwahnn of the DUSAF Architectural Department and his new bride, Jo, are back from honeymooning in California.

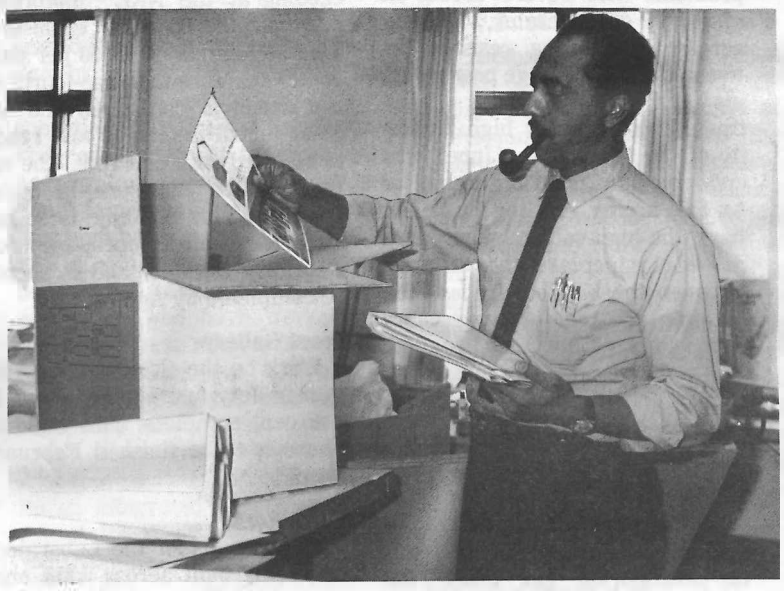
Bill Johncox of the Mechanical Department has been elected for his third term as President of the Chicago Regional Chapter of ASPE (American Society of Plumbing Engineers). He and Walter Knight, also of the Mechanical Department, are charter members of this chapter, and Bill is one of the national founders of the ASPE.

Fred C. Alston has been promoted to Chief Designer, replacing Mike Bobick, who has resigned.

Emil Santucci, who was an employee in the Mechanical Department, died Thursday August 21st.

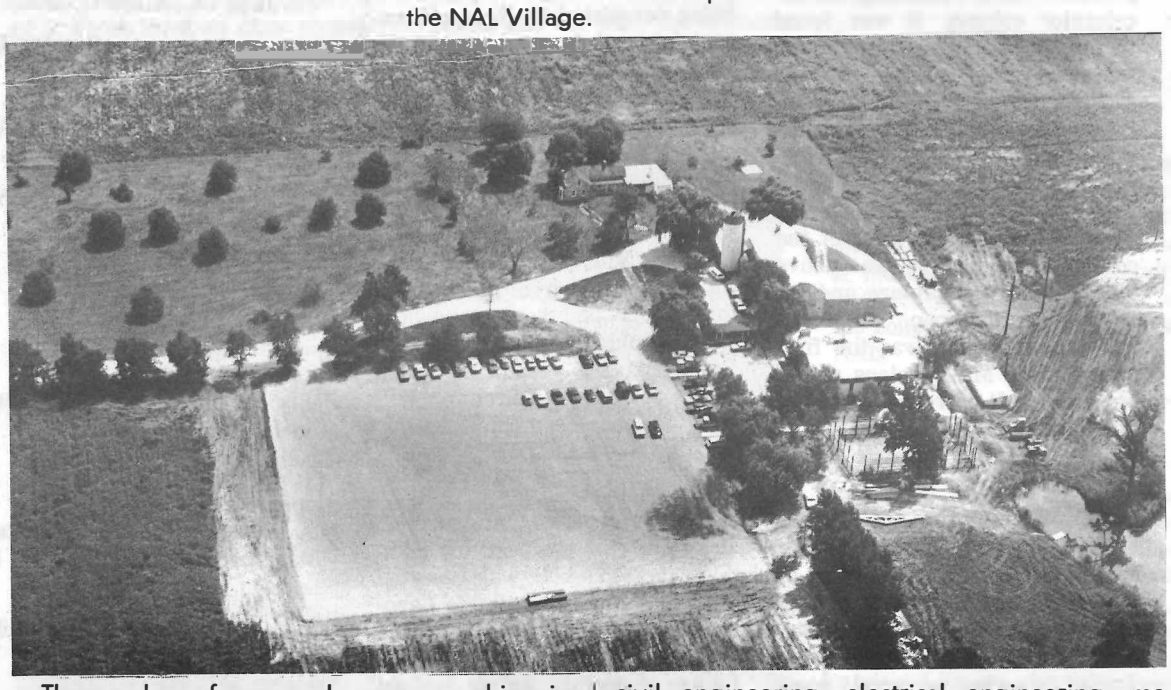


Jack E. Layman of the NAL Central Machine Shop machining a 12½ ton beam stopper for the Booster group. The beam stopper is situated between the linear accelerator and the booster ring in the accelerator system and used, as the term applies, to stop a beam coming from the linac from entering the booster ring. The work was done under the direction of William R. Jones, Foreman, Technical Services.

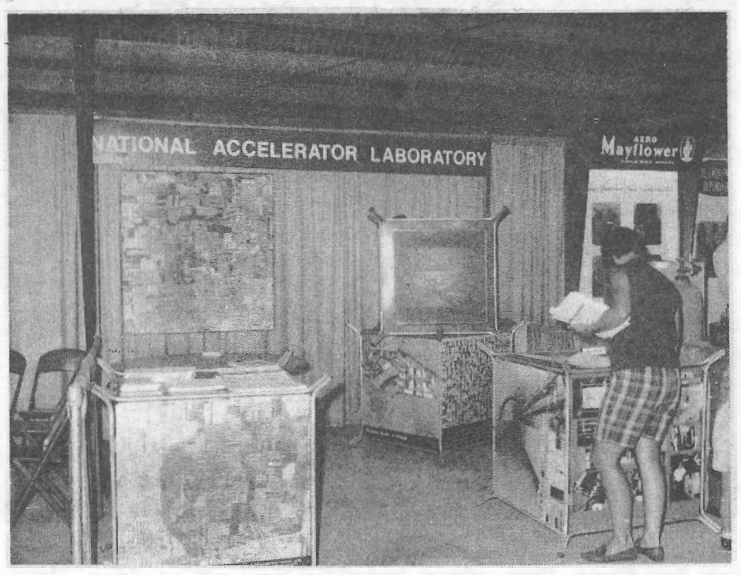


DUSAF's Fred C. Alston packs for the move from Hinsdale to the NAL Village.

Another view of the huge boring mill machine.

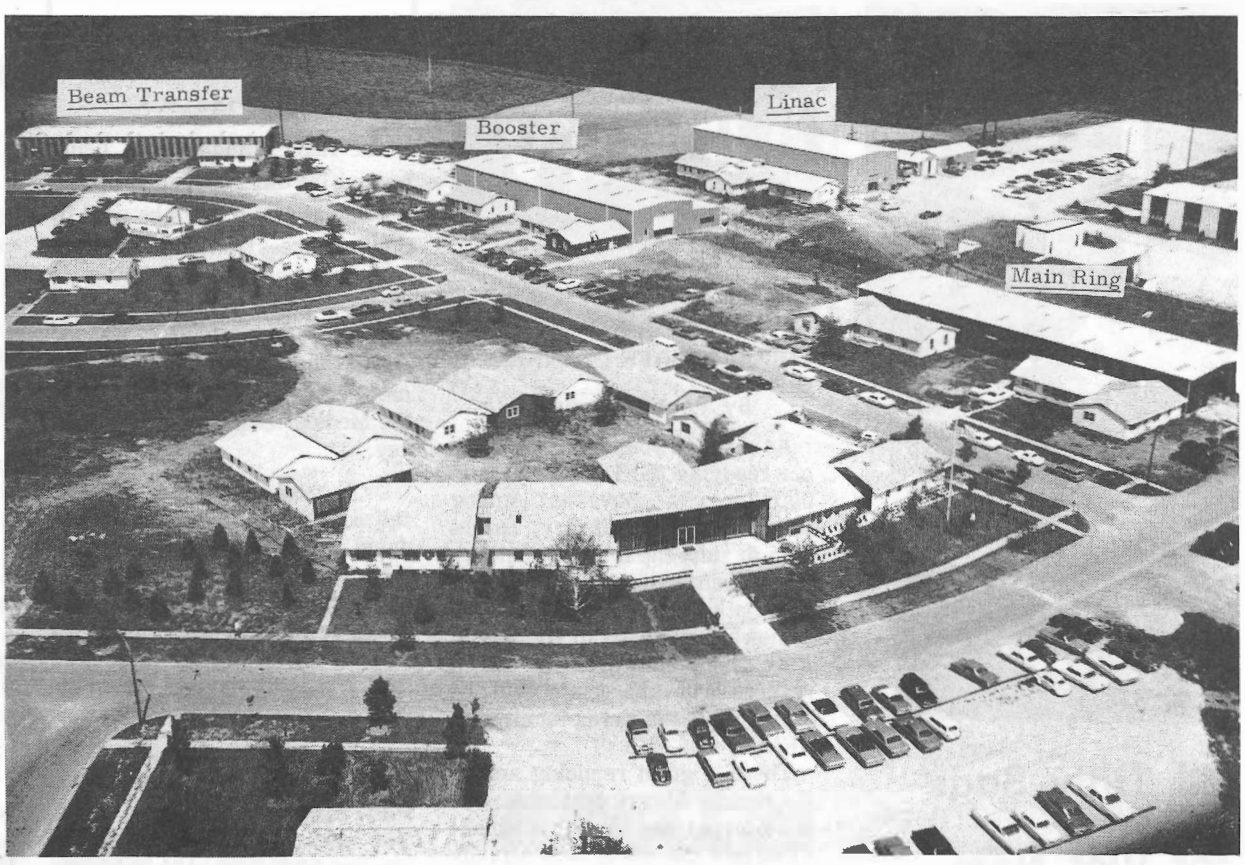


The number of men and women working in on-site offices concerned with NAL's planning and development nearly doubled over the summer. DUSAF moved its office to the NAL site. Here is an aerial view of the former Phillips Farm, just off Batavia Road near Wilson Road, in which DUSAF offices are located. The home and the barn are being used for offices for the civil engineering, electrical engineering, mechanical engineering, structural engineering and the DUSAF switchboard personnel. A parking lot was developed for the employee's autos. The farm is about one-mile from the NAL "footprint" area where construction is proceeding on Linac and Booster enclosures.

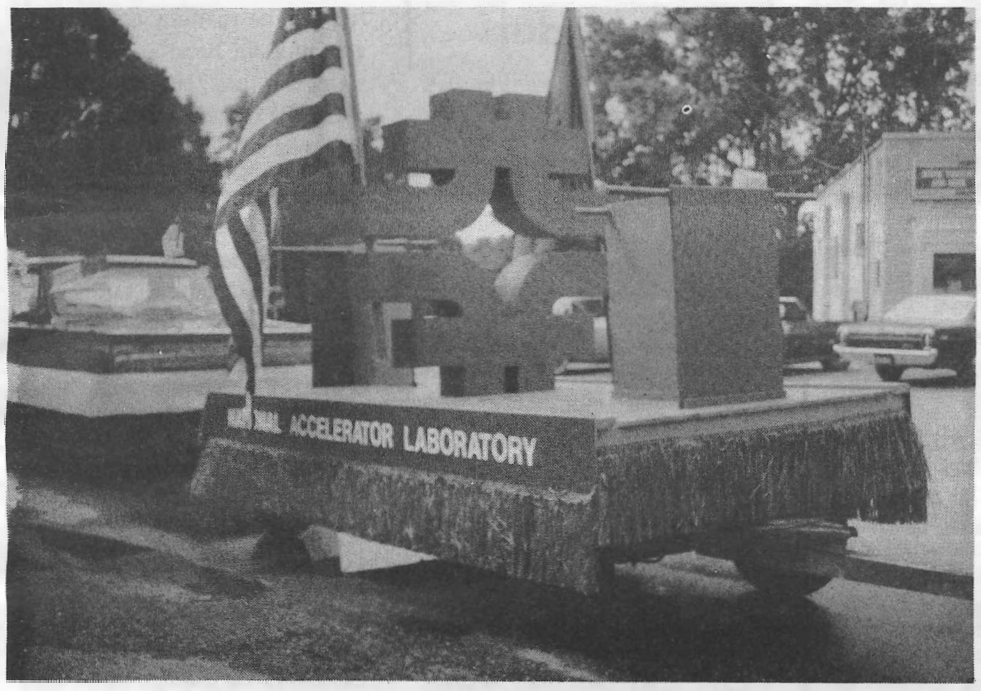


Exhibits designed by the NAL Model Shop, under the direction of Jose Poces, were displayed by NAL at the DuPage County Fair, Wheaton, and the Kane County Fair, St. Charles, during July. Thousands of visitors to the two Fairs obtained literature about NAL and received answers to their questions about various phases of the Laboratory's development.

Among those who manned the NAL booths at the two Fairs were: Lowell Klaisner, Booster; Rudy Nissen and Dick Andrews, Beam Transfer; Kathy Cooper, Gloria Moore, Joyce Howell, Warren Cannon, Jim Thompson and Charles Marofske, Personnel; Jerry Jones, Planning & Scheduling; Margaret Kasak, Linac; Doris Ferrell, Director's Office; Gayle Notley, Village Management and Marilyn Paul, Purchasing, as well as the personnel in the Public Information Office.



A late Summer, 1969, aerial view focuses on the northeast section of the NAL Village. Across from parking lot is "The Director's Complex" of homes converted into offices for the immediate staff of Dr. Robert R. Wilson. Also, there is the Curia for NAL seminars. Beam Transfer, Booster, Linac and Main Ring laboratory buildings are designated.



A float, designed by the NAL Model Shop, rolled through the streets of Warrenville in its annual Fourth of July parade. Jo Baaske, Accounting; Dottie Stevens, Transportation; and Nancy Mueller, Photography, rode on the float which was driven by George Davidson, Maintenance.

Summer, 1969, employees at NAL included five students from the Dunbar Vocational High School on Chicago's South Side. They were recruited by NAL's Personnel office, which had set up booths at several career day panels held at Dunbar.

This photo shows three of the five youths. These three were among the top 12 seniors in Dunbar's June, 1969, graduation class. The youths are (left to right) Larry Tate, assigned to Beam Transfer; Johnny Green, Main Ring, and Russell Jackson, Beam Transfer. Tate and Green have remained on the NAL staff; Jackson plans to attend college this Fall. The other two Dunbar alumni are Billy Shumate, Accelerator Theory, and Michael Wilkes, Booster. They were unavailable when this photo was taken.

10 Science Fair Winners Visit NAL In August

On August 21, NAL was host to 10 students — eight boys and two girls — and their teachers who were guests of the U. S. Atomic Energy Commission participating in a program at Argonne National Laboratory called the Nuclear Research Orientation Week.

Selection of the ten recipients of the Special Award was made at the 20th International Science Fair held in Fort Worth, Texas last May in recognition of the excellence that each student's exhibit showed to an atomic energy related field.

An important part of the program for these bright students was conferences with scientists at Argonne and observations of laboratory techniques in their special fields. One young man chose "Ion-Source Accelerator System for Nuclear Study" as his project. It represented four years of work in developing a system for producing and studying nuclear reactions. In particular, protons and deuterons were used to bombard lithium metal to verify the mass-energy relationship established by Einstein's Theory of Relativity.

International Science Fair winners, L to R: Kirk Shinsky, Allentown Pennsylvania; Robert B. Krawchuk, Oreland, Pennsylvania; Leland R. Smith, S. Sioux City, Nebraska; Elizabeth A. Lunte, St. Louis, Missouri; Thomas L. Guffin, Talledega, Alabama; Barbara A. Williamson, Defiance, Ohio; Paul T. Harwell, Claxton, Georgia; Neil R. Hauser, Montrose, Colorado; Lane P. Hughston, Dallas, Texas; William T. Mason III, Jacksonville, Florida.

Fill 'Ditty Bags' for Viet Nam

NAL family members took part during the summer in "Operation Shop Early," the American Red Cross program that sends "ditty bags" filled with gifts to servicemen in Vietnam at Christmas time. Special displays of the "ditty bags" to be filled and suggested contents for the bags were set up in the NAL cafeteria by Mrs. Hildegard Lyson, DuPage area regional director of the American Red Cross.

Sullivan, Latzke Promoted

The promotion of two NAL Business Office staff members has been announced by Donald K. Poillon, director, Business Administration.

David Latzke has been named Contracts Administration Supervisor in charge of all NAL contracts except that with DUSAF. James Sullivan has been appointed Assistant to the Director of Business Administration, responsible for the administration of the DUSAF contract and other special projects.

LIBRARY MOVE PLANNED

By Roger Thompson

As many of you know, workmen are readying the Director's Complex for new move-ins. Among these will be the library. Target date to start the move is October First. Elimination of the kitchen and bath facilities will give us somewhat more room for books. Another improvement which readers will appreciate will be proximity to the Xerox facility.

HELP

There is great rejoicing among the regular library personnel: our work-force has been doubled! (Two now instead of one) Already users have noticed the change. The cause for rejoicing is Miss Pamela Whitlatch, who came for the summer, but has decided to remain on. Already the catalog is receiving a revamping. Customers also have mentioned an improvement in the appearance of the library.

RECALLS

In line with the attention being given the catalog, many users are receiving recall notices. This is a part of the permanent cataloging process. It normally takes about two days. Books returned with a request for renewal will be promptly serviced.

JOURNAL ROUTING

Our last column asked for reaction to the policy of routing journals. As a result of this, we have decided to ask those who would like to receive a journal to call us on extension 209. We will set up the routing as soon as possible (except for those very few journals which must be retained in the library). A list of "Journals Received in the NAL Library — September 1969" has recently been distributed to Section Leaders.

Finally, a reminder, suggestions for new material whether in the form of a book, journal or report, are always welcome as we continue to build the collection.

First Aid Reminders

By DOROTHY POLL, R.N.

The NAL ambulance is being parked by the Machine Shop every day at 4:30 p.m. to be used by the employees working the night shift. Bob Scherr has explained the equipment available on the ambulance to the groups. Any accident that takes place during the night shift should be reported to the Medical Department the next day.

Dr. Cornell has been hospitalized since August 12th. He is doing well following a heart attack. We have fallen behind again on our physicals but hope to have Dr. Cornell back very soon. We will be contacting all those who need physicals and will set up appointments at this time.

The Medical Department has a new supply of Asian flu vaccine with Hong Kong vaccine available for any employee desiring this protection. The injections should be started in October and repeated once. If you would like to have these injections, Call 323.

Allergies and hay fever were very prevalent this year among our employees. It is possible for the Medical Department to give allergy injections to anyone needing them. Have the allergy medication and the orders from your doctor sent to the Medical Department at NAL.

NAL's Fire Fighters

Two NAL employees recently were graduates of the American Red Cross 13th annual industrial first aid seminar. They are (left) Gregory S. Urban, 3319 S. Euclid, Berwyn, of Linac, and Mrs. Dorothy Poll, R.N., of 130 Edgewood Drive, Bartlett, of Personnel, who is on the right in the above photograph.

The 211 students in the seminar received ARC standard, advanced or instructor first aid certificates at graduation ceremonies at Chicago's Museum of Science and Industry. The First Aid "victim" for the graduation was Miss Joan Chudo, (center), of the Red Cross staff.

NAL Social Calendar

Listed below, by month, are activities being planned for NAL personnel. Specific dates will be announced in forthcoming issues of the Village Crier.

September
Bus Tour — Chicago
October
Bicycle Race — Second Annual
Halloween Dance
November
Swim Night
Theatre Party — "HAIR"
December
Christmas Dinner Dance — Pheasant Run Lodge
January
Swim Night
February
Ski & Skate Party
March
Swim Night
Monte Carlo Party
April
Theatre Party
May
May Fete Dance
June
Bus Tour — Chicago

Where The Buffalo Roam

By mid September, six buffalo will be roaming on the west side of Eola Road — a strange sight for the "city slicker" or even for the "country folk" in this area.

Two mothers (they're called cows, I'm told), two daughters of the mothers (yearling heifers), one baby boy (bull calf), an undetermined child (one of the mothers is "in a delicate condition"!) and one father husband (referred to as a buffalo bull — not to be mistaken for Buffalo Bill!) will be attracting attention from everyone passing by.

It is expected that this new NAL family will be shipped from Longmount, Colorado, all in September and will be setting up housekeeping in a fenced-in area near the Laboratory Village. The head of the household recently starred in a Frontier Day Parade at Cheyenne, Wyoming, where more than 200,000 people watched him behave like the gentleman he is!

—Photo by Tony Frelo, NAL

The NAL fire trucks served a recreational purpose at the Laboratory picnic this summer. Scores of youngsters rode about the village aboard the fire trucks which were piloted by members of the NAL volunteer fire department. Wives of NAL employees served as "safety engineers" on these small-fry excursions.

Photo by Tony Frelo

The NAL "emergency squad" special equipment now includes two fire engines and an ambulance. This photo was taken in the NAL Village in front of the corn crib on the former Kuhn farm. The corn crib has been covered with sheets of plastic so that it can serve as a garage for fire trucks. The ambulance generally is kept beside the First Aid house at 24 Sauk Boulevard.

Here (left to right) are the late Summer, 1969, volunteer fireman and ambulance crew at NAL: Greg Urban, Dorothy Poll, Bob Scherr, Don Richied, Jeff Gannon, Mark Kibiliko, Bob Hodge, Dave Wilson, Jim Shallenberger, Joe Otavka, Bud Koecher, Leo Ray, Bob Kolar.

Where Have All The Farmers Gone?

By Karyl Louwenaar

Where have all of the farm families who lived on the NAL 6,800-acre site moved in recent months?

The land, some of the most productive in northern Illinois, was turned over to the U. S. Atomic Energy Commission for development of the National Accelerator Laboratory earlier this year by the State of Illinois.

Relocation Studied

A survey was made this summer of the relocation of the farm families who once occupied the acreage along familiar DuPage and Kane county highways — such as Batavia, Feldott, Giese, Eola, Kautz roads.

Some of the families had been residents of the site area for scores of years. Others were relative newcomers. To honor the former residents of the site and also to provide a historical context, NAL is establishing a museum on the site. It will be located on the former Leon Feldott farm on Batavia Road.

Most Stay Nearby

Of the 56 farm families moving off the NAL site, 39 have relocated within a 40-mile radius of the site. Since many had been long-time residents on the site, the decision of so many to remain in the same general area is not surprising.

The remaining 17 families are accounted for as follows: 11 are still living on the site farms, nine on a lease-back arrangement (they will of course have to move eventually); three families moved to the Dixon-Oregon area of western Illinois; one moved to Minnesota, one to Missouri, and another to a ranch in Arizona, close to the Mexican border.

Some Retired

Only about one-quarter of the 56 families relocated on working farms, since many of the men were of retirement age and took advantage of this opportunity to withdraw from farming. Two families who already owned second farms had only to move to the other location.

Unit Size Increases

Many of those who purchased farms obtained even larger units than they had owned on the site, at least four of the new farms comprising between 250 and 350 acres. These farmers typically say, "Farming is all I know; it's what I love, and I wouldn't want to do anything else."

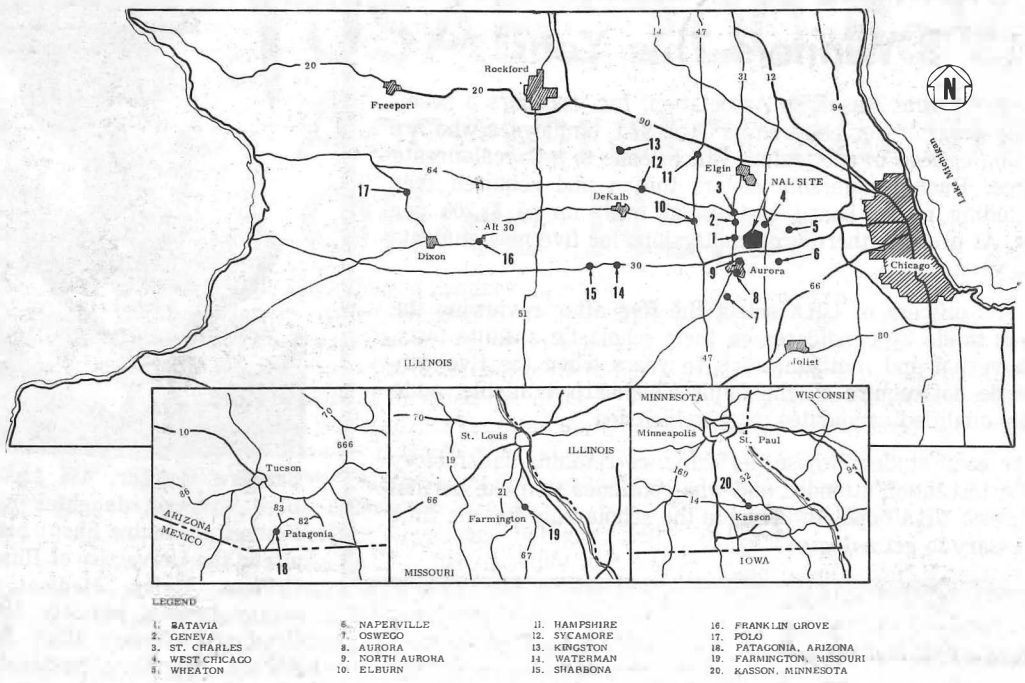
The rest of the families either succumbed to the lure of suburbia, or stayed in the country but on smaller plots including just the house and perhaps a garden as the last vestige of farm life. While a half-dozen kept their former homes and moved them onto lots in Batavia and West Chicago, others purchased new homes and are enjoying more up-to-date and elegant surroundings than ever were theirs on the farms.

It has been reported that during the past 18 or 20 months there were seven deaths among the farm families of the site. Almost all were over 60 years of age, and all were males.

Now that the critical period has passed — the months, the years of uncertainty since the site was announced in 1965, the searching for a new location (one family looked at over 100 farms, and many looked at at least 40!), and the moving of all their belongings — most seem to be enjoying their new life.

But they say, almost without exception, "I still miss the old farm." Even pleasant new surroundings and a generally smooth adjustment to the change will not replace the loss of the old community and the break-up of the long-established neighborhood groups that existed on the 6,800 acres.

Location of families who have moved from the NAL Site



Map by Geno Loro

The Peter Erdmanns: Another Fresh Start

By Karyl Louwenaar

While many of the farm families of the NAL site had lived most of their lives in this area, even in the same homes, others — like the Peter Erdmanns — had gone through the pains of moving several times before. Peter is a dark, rough-featured farmer and printer who, with his wife Anna, came to Illinois as a Hungarian immigrant in 1923. After moving to California for a time and then returning to Illinois in 1939, the Erdmanns bought land in what is now the southwest corner of the NAL site, on Kautz Road, and on that 75 acres Peter built the home that was owned most recently by Jack Whitwell.

Illinois is Home

In 1948 he sold that farm and again moved to California where he raised oranges in the San Fernando Valley, working also in a print shop. He soon became dissatisfied with the shop, and both he and his wife became lonesome for Illinois again; so they returned once more in 1950, this time to stay. They bought a 96-acre farm on Wilson Street, near NAL's eastern boundary, to which they later added acreage and on which they eventually built two homes and Peter's special pride — a flower garden, complete wtih fountain, which formed an oval island for their drive-around.

Area Egg Dealer

In addition to raising soybeans and corn there, the Erdmanns developed a successful egg business, supplying both Wheaton and Concordia Colleges for twelve years.

Considering all the moving they have done in the past, it may have been somewhat easier for the Erdmanns than for some of the other farmers to "pick up stakes" this time. Nevertheless the process of finding another farm or home to buy, especially for a couple in their 60's, was a long-drawn-out and often frustrating experience, as it was for some other NAL site farmers.

The Erdmanns went through many considerations before they finally found their new home. At one point, they discussed moving the two homes on their NAL-site farm to vacant lots they had purchased in nearby West Chicago. But when they discovered that the moving costs would be prohibitive, they decided to dismantle their two farm homes and rebuild them on a new farm that they would purchase.

Moved Houses From Site

The Erdmanns now have a choice 360-acre farm located north of Alt. 30 at Franklin Grove, Illinois, 62 miles west of NAL; and all this spring and summer, Erdmann and his 25-year-old son, Peter Martin, have been returning to their former farm on the NAL site to dismantle the homes there and to cart them, piece by piece, to a storage barn on their new farm. Sometime they hope to rebuild these two homes on the new farm — if they can find time. Both men have the varied skills of old-time farmers — from carpentry to gardening, from raising chickens to painting barns.

Search Discouraging

An unusual set of circumstances led to the Erdmann's finding this new farm. Having looked at over 100 farms and discussed and explored the multitude of possibilities that lay before them, they were found on February 4 of this year looking one more time at a farm in western Illinois, near Polo. Knowing that they would soon have to make a decision, and not being enthusiastic about any of the farms they had seen up to that time, they were feeling most discouraged and helpless.

This particular corn-soybean farm was a real possibility for them, but most of the buildings were in a run-down condition, and the main house had even burned down and would have to be rebuilt. The soil also was not as desirable as they had hoped to find.

Against the pleas of both Mrs. Erdmann and their son, Peter decided to settle for this farm. "I'm not going to move out here," declared Mrs. Erdmann flatly; and Peter Martin said he absolutely refused to work that farmland. But Mr. Erdmann countered that he had made up his mind to buy that farm and would move out there by himself if necessary.

Franklin Grove Farm

Along with the real estate man, the Erdmanns dropped into a little restaurant for lunch that day and there happened upon another real estate agent with whom they had some dealings before. He told the Erdmanns that he had tried to reach them by telephone that very morning because he had something that he thought might interest them. Peter informed the gentleman that it was too late, that they had just decided on a place.

However, shortly after they arrived back home that evening, the telephone rang — it was this second realtor again attempting to interest the Erdmanns in his farm. After a few minutes of discussion, they agreed to look at the farm; and on the morning of February 8, the Erdmanns were in Franklin Grove by nine sharp.

New Home

The agent drove them out to a tempting, well-developed 360-acre farm, one which the Erdmanns had observed earlier in their searchings and which Peter especially had remarked about. ("Now if we could only find a place like that!") He could scarcely believe that this was the very farm that was now being made available to them. The Erdmanns were skeptical at first about the cost of such a farm, so were incredulous but completely delighted to learn that it would be within their means financially, "Thanks to the State of Illinois," says Peter, "for the easy settlement." Within five minutes, the decision had been made to purchase this farm rather than the other one, and the first real estate agent, who was expecting the Erdmanns to sign the papers later that same day for the other farm, was immediately notified. (Peter writes that since he had been hurt falling off a roof, it was difficult for him to get out of the car; hence the long, five-minute delay in what would otherwise have been an instantaneous decision!)

Terms Attractive

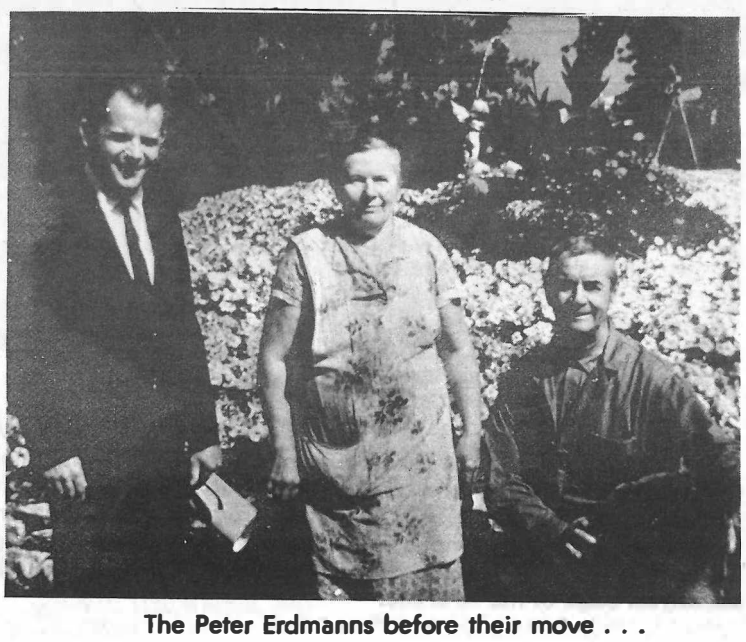
An especially interesting aspect of this episode is that the second realtor had had a deadline of March 17 for finding a buyer for the Franklin Grove farm, and of course the Erdmann's decision to purchase it came only about a month before that deadline. The previous owner, who had purchased the farm for $10,000 down with the remainder to be paid by March 17, 1969, had died unexpectedly on January 15. His family, not wishing to complete the transaction for the farm and have it included in the estate, had contacted the realtor, asking him to find someone to take over the agreement as of March 17.

Thus the Erdmann family, on the verge of settling for a farm which they felt was not first-rate, were able at the very last minute to obtain a spacious and park-like country estate. "Providence led us there," Peter writes. "Thank God for all this."

New Flower Garden

The farm was developed by a wealthy insurance broker from Chicago, and the Erdmanns, being aesthetically sensitive and artistic people, are particularly delighted with the natural beauty of their new place. There is a flower garden to replace the one on the NAL site, and there is a large variety of trees as well, including blue spruces lining the drive to the house and maples arching the highway that cuts through the farm.

The Erdmanns are still quite European in many ways, and their new surroundings are surely conductive to their philosophy of living simply and "naturally" but beautifully. Life has begun afresh at sixty (plus) for the Erdmanns.



The Peter Erdmanns before their move . . .

URA-NAL Scholarship Plan; 8 Winners This Year

Universities Research Association, Inc. sponsors a scholarship program for children of URA-NAL employees who are starting college in curriculum which leads to a baccalaureate degree. Each scholarship covers tuition and required fees (excluding room, board and social fees) up to $1,200 per year. At present, there are scholarships for five new students each year.

The officers of URA select the five after reviewing the scores made by candidates on their scholastic aptitute tests, both verbal and mathematical. In years when the five winners do not require all the funds which are available, additional qualified candidates may be included.

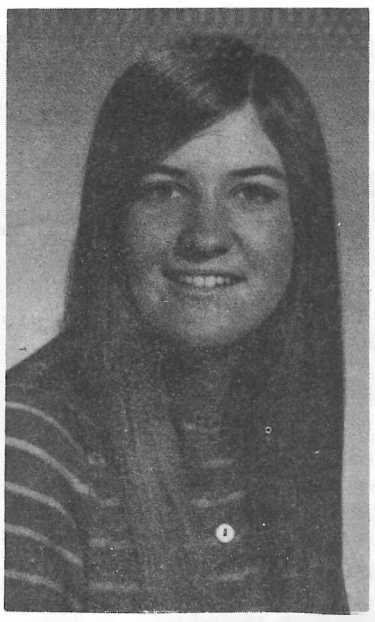
For each student whose performance remains satisfactory to the institution attended and who continues to make normal progress, URA hopes to continue the scholarship for the time necessary to get a degree.

* * *

Pictured on this page are NAL family members who are recipients of the 1969-70 URA Scholarships.

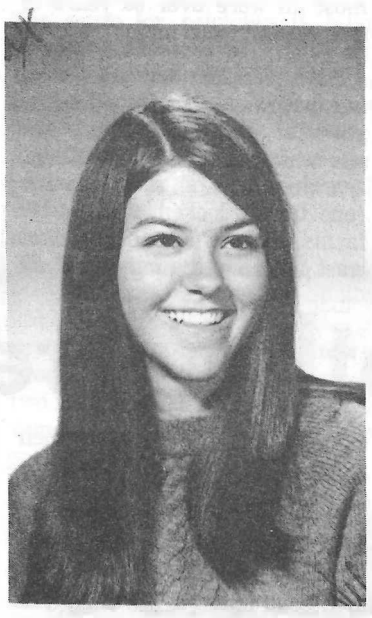
Barbara Bowker, 455 Lakelawn Blvd., Aurora, daughter of Earl Bowker (Machine Shop) plans to attend the University of Illinois at Urbana. Major, Medical Technology; minor possibly biology. Graduated Rosary High School, Aurora. Secretary, National Honor Society chapter, senior year. Winner of honorary Illinois State Scholarship. Active in sports; yearbook.

Jonathan U. Curtis, 172 Woodland Hills Road, Batavia, son of Dr. Cyril Curtis (Linac). Graduated from Batavia High School with high honor. Member National Honor Society; winner of Illinois State Scholarship; Scholarship to high school art workshop. Art work has been exhibited in Tennesse, Wisconsin, and Illinois. Plans to study for B. A. degree at Northern Illinois University, DeKalb, majoring in art, emphasis on graphics or industrial design.



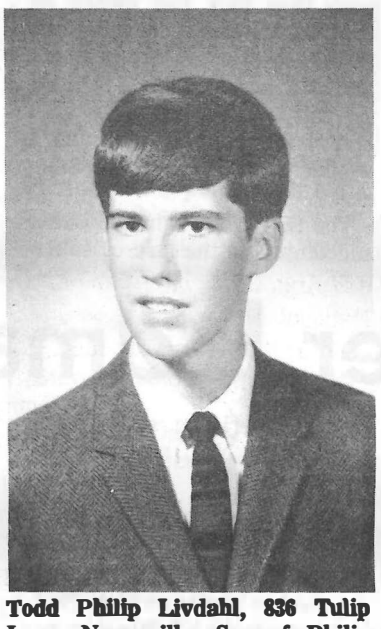
Terry Lee Daniels, 7508 Lemont Road, Downers Grove, Daughter of Bob Daniels (Beam Transfer). Graduated Downers Grove North High School. Plans to attend Southern Illinois University, Carbondale, majoring in Home Economics, Interior Design, minor, psychology. Member West School gymnastics club. Plans to participate in music and intramural sports activities.

David Goldwasser, 1755 East 55th Street, Chicago. Son of Dr. Edwin Goldwasser, Deputy Director of the Laboratory. Graduated from University High School, Urbana in 1968 at age 16. Spent past year in London and Paris. Plans to enter Harvard College, majoring in literature. Active in music activities; sports editor for newspaper.



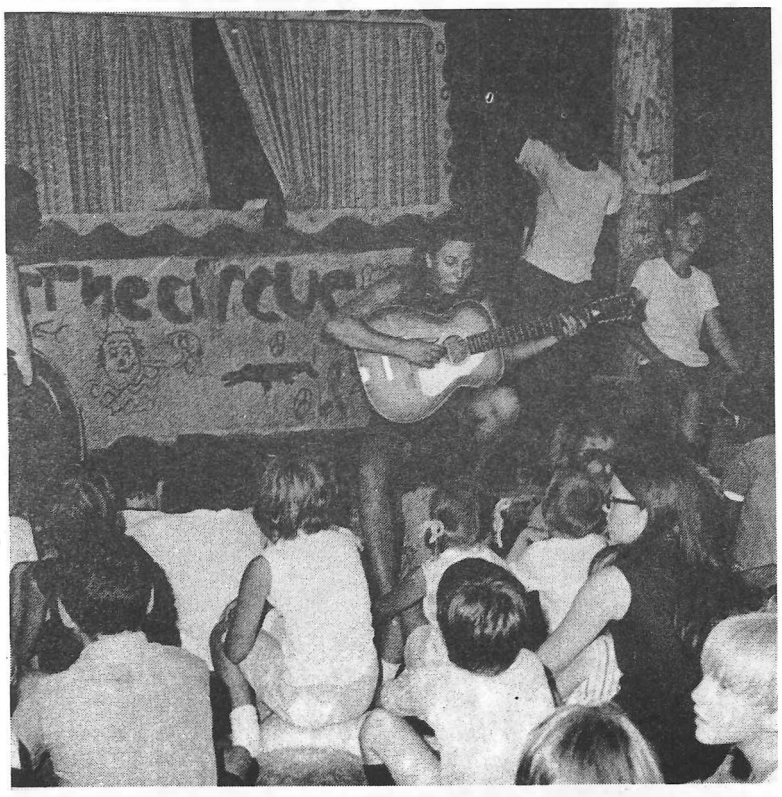
Debra Hardy, 321 North Buell, Aurora. Daughter of Luther Hardy (Machine Shop). Graduated West Aurora Senior High School. Winner Illinois state scholarship. Plans to attend University of Illinois at Urbana, majoring in journalism. Active in several sports, music activities.

Susan Juergens, 12 East Gartner Road, Naperville. Daughter of Scheduling. Graduated Naperville Schedulng. Graduated Naperville Central High, June 1968. Member, National Honor Society; honorary Illinois State scholarship. Currently a sophomore at University of Illinois, Urbana, majoring in English.



Todd Philip Livdahl, 836 Tulip Lane, Naperville. Son of Philip Livdahh, Linac. Graduated Naperville Central High School. Illinois State Scholar. Enrolled at St. Olaf College, Northfield, Minnesota; major, physics or biology; minor, math. Plays hockey; skis.

Donald L. Poll, 130 Edgewood Drive, Streamwood, Illinois. Son of Dorothy Poll, First Aid. Graduate of Larkin High School, Elgin. Licensed pilot for past two years. Accomplished organist; letterman in wrestling. Plans to attend University of Illinois, Urbana, majoring in physics; minor, aviation.



—Photo by Tony Frelo, NAL

"A. Frogg's Farm" provided a place on the NAL site for more than 'reading, writing and arithmetic.' It also was a place for singing and playing for boys and girls from both suburbia and the inner-city during Summer, 1969. Here, one of the "A. Frogg" staff plays the guitar as an afternoon songfest takes place on the southwest edge of the NAL site.

* * * * *

Mr. and Mrs. Quentin A. Kerns of Glen Ellyn will be "parents" to Taweeshai Lertjeraprasert, American Field Service student from Bangkok, Thailand, for the school year '69-'70. "Tan" arrived at the Kerns home on August 2nd and will enter Glenbard East High School as a senior majoring in economics. His widowed mother, six sisters and two brothers live in Bangkok where the family owns a jewelry shop. After completing his school year in the United States, "Tan" will continue his education at the University of Bangkok. "Brother" Bob Kerns, also a senior at Glenbard East, and Tan toured the Laboratory on August 13th. Quentin Kerns is Group Leader, Radio Frequency Section.

* * * * *

This photo, taken late in August, shows a number of the summer employees:

Front Row: (left to right) Nancy Mueller, Pamela Whitlatch, Linda Porter, Marilyn Hogan, Norma Johnson, Elmer Dean Pegues, Peggy A. Arthur and Beverly E. Cartwright:

Second Row: (l. to r.) Hibrian Caraballo; Jeff Wetteland, Felipe Garza, Rafael Mendoza, Reinaldo Ramos, Keith Coiley, Bob Miller, Herman Fowler, Henry L. Moore, Leon Robinson and Steve Franklin.

Back Row: (l. to r.) Kurt W. Hirchert, Charles W. Barrett-Smith, Daniel P. Harty, Charles Klang, Regner Anderson, Keith G. Meisner, William Skeens, Leo Grimes, Larry Lax, Michael Neal, and Michael Johnson.

Other summer employes who were not available to pose for this photograph were James Batek, Gayla Abbey, Richard Abbott-Aspen, Karyl Louwenaar, Russell Jackson, Nathaniel Dunklin and Natalie Nezrick.

40 Youths in Summer Jobs On Laboratory Site

Forty high school and college students took part in summer job training programs at the National Accelerator Laboratory site during the past summer.

Thirty-eight of the young men and women were employed by NAL and two were given positions on the staff of the U.S. Atomic Energy Commission's 200 BeV Area Facility offices in the NAL Village.

The young people were involved in a number of phases of the Laboratory's work, assisting scientific, technical and administrative staffs.

"We were pleased to offer these willing young men and women positions at NAL during the summer months and it is our hope that their interests in the physical sciences have been further developed through their association with us," said Charles F. Marofske, NAL's acting personnel director.

This was the second summer in which NAL had offered temporary positions to young men and women from the Chicago metropolitan area. During the summer of 1968, NAL's summer employees mainly worked at the Laboratory's temporary offices in suburban Oakbrook.

The NAL group was among more than 300 high school and college youth given summer positions by the facilities of the Atomic Energy Commission's Chicago Operations office, the Argonne National Laboratory and the National Accelerator Laboratory.

The summer program was one of the largest programs of its type in DuPage and Kane counties, where the AEC facilities are among the leading employers.

Through a variety of programs these young people, primarily from Chicago and surrounding suburbs, did research, worked as laboratory assistants or technical aides or worked in maintenance service and clerical jobs.

The AEC had ten young people working on various summer assignments through its participation in the 1969 Federal Summer Employment Program for Youth. These students worked at the AEC's Chicago Operations Office located at Argonne, at the AEC's 200 BeV Area Office on the site of the National Accelerator Laboratory and at the AEC Compliance office in Glen Ellyn.

The largest single group of summer employees at the AEC's facilities were 80 young people from Chicago, who worked at Argonne. The program was a joint effort with the Neighborhood Youth Corps of the Chicago Committee on Urban Opportunity.

The summer employees at NAL included the following: 1. Russell Jackson, of 4845 S. Federal Street, Chicago; from Dunbar Vocational; Laboratory Assistant - Beam Transfer; 2. Charles Barrett-Smith, 25W646 Durfee Road, Wheaton; University of Illinois; Laboratory Assistant - Booster; 3. Leon Robinson, 414 Crescent, Wheaton; Wheaton Central; Maintenance Man - Village Services; 4. Victor Beard, 1409 Avery Avenue, Wheaton; Wheaton Central; Maintenance Man - Village Services; 5. Michael Johnson, 63 Smith, Aurora; East Aurora; Maintenance Man - Village Services; 6. Donald Key, 410 Crescent Street, Wheaton; Wheaton Central; Maintenance Man - Village Services; 7. Beverly Cartwright, 426 North River Street, Batavia; Batavia Senior High School; Clerk - Business Office (Purchasing); 8. Charles Klang, 738 Crescent Boulevard, Glen Ellyn; Iowa State University; Laboratory Assistant - Booster; 9. Keith Coiley, 538 Lowell Avenue, Glen Ellyn; Glenbard West; Maintenance Man - Village Services; 10. James Shackelford, 109 Summer, Aurora; East Aurora; Maintenance Man - Village Services; 11 Reinaldo Ramos, 785 Fulton, Aurora; Maintenance Man - Village Services; 12. Felipe Garza, 622 Hankes Avenue, Aurora; East Aurora; Warehouseman - Materials Services; 13. Peggy Arthur, 29 Osgood Street, Joliet; Joliet Township High; Clerk - Business Office (Accounting); 14. Linda Porter, 13 Greenfield, Aurora; Waubonsee Junior College; Clerk - Director's Office; 15. William Skeens, 1530 West Wisconsin Avenue, Milwaukee, Wisconsin; Marquette University; Laboratory Assistant - Linac; 16. Regner Anderson, Rt. 1, Box 632, St. Charles; Northern Illinois University; Laboratory Assistant - Linac; 17. James Batek, 855 Hillside Avenue, Glen Ellyn; Glenbard West; Laboratory Assistant - Main Ring; 18. Nancy Mueller, 28W610 Townline Road, Warrenville; Midwestern College; Clerk - Planning and Scheduling; 19. Gayla Abbey, 1033 Tenth, Maywood; Proviso East; Clerk - Public information; 20. Jeff Wetteland, 519 Fredericks, Aurora; East Aurora High School; Warehouseman - Materials Services; 21. Leo Grimes, 711 View, Aurora; West Aurora; Maintenance Man - Village Services; 22. Emmett Sneed, 30 North Loucks, Aurora; East Aurora; Maintenance Man - Village Services; 23. Keith Meisner, 901 Garden Avenue, Geneva; University of Illinois; Laboratory Assistant - Linac; 24. Kurt Hirchert, 249 Spring Avenue, Glen Ellyn; University of Illinois; Laboratory Assistant - Main Ring; 25. Daniel Harty, 0C286 Church Street, Winfield; University of Illinois; Laboratory Assistant - Main Ring; 26. Norma Johnson, 1130 Kane, Aurora; East Aurora High School; Clerk - Radio Frequency; 27. Karyl Louwenaar, 406 East Madison, Wheaton; University of Rochester; Research - Public Information; 28 Hibrian Caraballo, 615 College Avenue, Aurora; K. D. Waldo; Maintenance Man - Village Services; 29. Herman Fowler, 810 North May, Aurora; West Aurora; Maintenance Man - Village Services; 30. Ellis Bailey, 834 North May, Aurora; West Aurora; Maintenance Man - Village Services; 31. Henry Moore, 1039 Grand Boulevard, Aurora; East Aurora; Maintenance Man - Village Services; 32. Rolando Cortez, 272 Beach, Aurora; East Aurora; Maintenance Man - Village Services; 33. Elmer Pegues, 102 East Avenue, LaGrange; Lyons Township; Clerk - Contracts and Legal; 34. Robert Miller, 508 East Liberty Drive, Wheaton; Wheaton Central; Maintenance Man - Village Services; 35. Timothy Gibson, 1518 Hill Avenue, Wheaton; Wheaton Central; Maintenance Man - Village Services; 36. Ruben Fuentes, 933 Claim, Aurora; Maintenance Man - Village Services; 37. William Patterson, 1300 Grand Boulevard, Aurora; Aurora East; Machine Shop Assistant - Technical Services; 38. Marilyn Hogan, 3S040 River Road, Warrenville; Northern Illinois University; Clerk - Contracts and Legal.

At the Atomic Energy Commission's 200 BeV Area Office: 1. Marilyn J.Bailey, 826 East Benton, Aurora, Aurora East; 2. Pamela J. Bassett, 1125 Watson, Aurora; Aurora East.

USAEC 200 BeV Accelerator Facility Office Notes

By Minerva Sanders

Many wonderful things have happened since our last column was printed, and one of these happenings included the move of the Fred Mattmuellers into their new home in Naperville. At present, Mr. Mattmueller is enjoying a well-deserved vacation.

Ruth Flegel and her guy, Ken Salach, decided that there's something to that old phrase "two can live as cheaply as one," because on August 23, they became Mr. & Mrs. Best wishes are extended to the happy couple from the 200 BAF staff.

Ron Zeitler and his family just returned from Land O'Lakes, Wis., where they spent a delightful week at Dick Mendham's "Sunrise Lodge." You should hear Ron tell about "the big one that got away."

Marilyn Bailey and Pamela Bassett joined our staff as Summer Aids. Pamela was assigned to the engineering group while Marilyn spent her time doing administrative work and helping out in the Area Manager's office. Now that school has started, the 17-year old seniors will work in the office three hours a day, Monday thru Friday, until graduation next June. It is planned that the girls will switch their work around, from time to time, so that they will learn all of the procedures for the Area Office and be able to work in any position assigned to them. Welcome aboard Marilyn and Pam; we couldn't have asked for two nicer girls.

Ruby Bland visited her family in Tennessee and had a wonderful time.

Latest word from Linda Weinberg Duckett is that she has given up her "Wave" status and is now working in a plush office in Norfolk, Va. Linda sends hello greetings to everyone.

Our other vacationers include Andy Mravca and family, who travelled to Iowa; Jack Kiefer and family drove to Wisconsin; Vern Kenney and wife drove to Maine; the Brooks motored to Nags Head, N.C.; Nashville & Knoxville, Tennessee; Washington, D.C., and Ohio; John Ryan and wife drove up to Lake Marie, Illinois; and Kenneth Walker and Charles Slaymaker stayed at home to take it easy.

We send "get-well" wishes to Louise Schusler, who is home nursing an injured leg and foot.

I'm happy to report that Ruth Salach and yours truly received a promotion last month. It couldn't have happened to two nicer girls. (SMILE) No brag, just facts!!

Marilyn Bailey

Pamela Bassett

Minerva Sanders

Pictured above is Dr. Frank C. Shoemaker holding a gift from the Laboratory of a very detailed ¼" scale model of a section of the Main Ring Tunnel, made of plexiglass and brass, presented to him upon his departure from NAL to resume his duties as Professor of Physics at Princeton University.

19 Trainees Get Plaques In Ceremony at NAL

A graduation ceremony was held Friday, September 5, in the NAL Curia for 19 young men selected by the Laboratory to take part in a new program to fill skilled jobs in the various scientific and technical groups.

Each of the young men received a plaque from NAL noting successful completion of the training course at the U.S. Atomic Energy Commission's Y-12 Plant at Oak Ridge, Tennessee.

Dr. Edwin L. Goldwasser, NAL's deputy director, presented the certificates to the NAL employees in the absence of Dr. Robert R. Wilson, NAL's director who was attending a physics conference in Russia.

Two Staffs Linked

The trainees are Negro men between the ages of 18 and 23. Nearly all were from the inner-city of Chicago and virtually all are natives of the Chicago metropolitan area.

The pilot program, for the first time, linked the staffs of two major operations of the AEC — the Y-12 plant in Tennessee and NAL — in an unusual effort to train disadvantaged men. Funding for the effort was arranged through an inter-agency agreement between the AEC and the U.S. Department of Labor, working with the Training and Technology Project (TAT) at the Oak Ridge plant.

Dr. Goldwasser said that both he and Dr. Wilson were pleased that NAL could make the employment opportunity available, "but more pleased that it worked out so well".

'Tremendous Challenge'

Kennard Williams, NAL's equal employment opportunity and community relations officer, spoke of the "tremendous challenge" the training program was to NAL. Said Williams:

"The end result of this new program can be seen here today — we can be very proud of these young men who were motivated, who stuck it out, who learned and who were so successful. They should get the praise for this unusual program."

Williams said that the "lives of these young men are completely changed, even though they may not think so, for the experience at Oak Ridge. Their ideas are changed, their attitudes are changed and they are motivated to go on."

Cooperative Program

Williams thanked Charles Marofske, NAL's personnel manager, Malcolm Lee and McGlother Irvin, of DUSAF's staff, for their assistance in implementing the program.

Trained Since February

The group has returned, in various sections, from the Oak Ridge training program in the last few weeks. They had departed from Chicago, February 9, 1969, by plane for Oak Ridge after completing a two-week orientation course directed by NAL's Personnel office.

The effort to improve economic opportunities for the young men was developed by the NAL Personnel staff working with members of the Training and Technology Project (TAT) at Oak Ridge. Upon completion of their courses, the trainees were assigned to various scientific and technical sections at NAL.

Some Relocate

A number of the trainees have re-located their homes from Chicago's South and West Sides to the Aurora, Batavia, Naperville and Wheaton areas. Some have married since completing their course. Others are continuing their educations by attending after-hours courses at various colleges.

TAT Trainees

Those who received their certificates at the ceremony were:

1. Gene Anderson, Lab Technician, Booster
2. Jimmie Bondurant, Lab Technician, Experimental Facilities
3. Clarence Bowling, Lab Technician, Beam Transfer
5. Curtis Bridges, Lab Technician, Beam Transfer
5. Cutcblow F. Cahill, Lab Technician, Radio Frequency
6. John Cooper, Lab Technician, Physics Research
7. David Foreman, Lab Technician, Main Ring
8. Theophilus Gordon, Lab Technician, Beam Transfer
9. Donald Hampton, Lab Technician, Physics Research
10. Roy L. Justice, Lab Technician, Physics Research
11. Robert Knowles, Lab Technician, Linac
12. Halbert Landers, Lab Technician, Main Ring
13. Bobby McNeal, Lab Technician, Booster
14. Gilbert Robinson, Detail Draftsman, Radio Frequency
15. Jeffery Ruffin, Lab Technician, Radio Frequecny
16. Elbert Smith, Lab Technician, Radiation Physics
17. Edward Stitts, Lab Technician, Booster
18. Gadis Wesley, Lab Technician, Linac
19. Theophilus Young, Detail Draftsman, Main Ring

Two young men, **Earl Anderson and Nelson Sample** will return from Oak Ridge the latter part of September to assume jobs in the Laboratory for which they are in training.

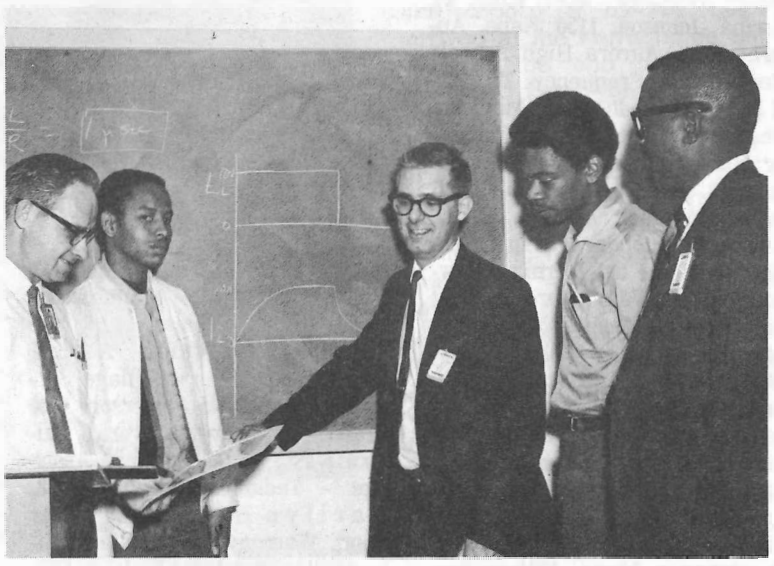


Photo Courtesy Y-12 Plant, Oak Ridge.

During their training period at Oak Ridge, Tenn., NAL's apprentices were visited by various members of the Laboratory's staff. Here, N.E. Morgan, instructor (left) explains curriculum to Charles F. Marofske, NAL's personnel manager, (center) and Malcolm Lee, DUSAF, (far right) as trainees Edward Stitts and Gavis Wesley look on.

'Chicago TAT Trainee Is Real Success Story'

The following article appeared in the OAK RIDGER, published at Oak Ridge, Tenn., on August 11, 1969. The headline read: "Chicago TAT Trainee Is Real Success Story." The article was written by Miss Nancy Rudy, a high school teacher from Seattle, Wash., who is a graduate student this year at the Medill School of Journalism, Northwestern University.

By NANCY RUDY

CHICAGO — Halbert Landers' 20 weeks of special training at the Y-12 Training and Technology school led to his first lasting job and to whetting his educational appetite.

Landers, a Chicago high school dropout, was one of 23 young Negro men from Chicago's inner-city area selected to take part in he pilot program to train unemployed and under-employed minority group members to fill skilled jobs at the National Accelerator Laboratory near Batavia, Ill.

Work on Main Ring

Landers now is working on the problems of curving electrical wires in close tolerance around the four-mile-long main ring of the new high energy physics researcher. He has been at the NAL for about a month.

The NAL training program was "a beautiful thing" for the 20-year-old Landers.

"I heard about it at the employment agency. They tested me and the NAL interviewed me," he said. Suddenly he was in Oak Ridge.

'My Last Chance'

"I was kind of shocked because I was a dropout," Landers said. "I was determined to do my best and not cop out like I had before. I knew it was probably my last chance."

Landers had dropped out of high school twice, once in Chicago and then in New York. He had 15 or 20 different jobs in as many months, but "they were just for pennies and mostly in construction."

Job at NAL 'Good'

His job at the NAL is "definitely a good job," Landers said. He is enthusiastic about the work he is doing now and also about his plans for the future, which includes college or junior college in September.

Science always has been his best subject, and Landers wants to study in that area. The **TAT** school exposed him to scientific experts.

He wishes these experts could have spent more time in the school. "They would come in and show us one thing," he said. "Then they would be pulled out just when I wanted to ask more questions."

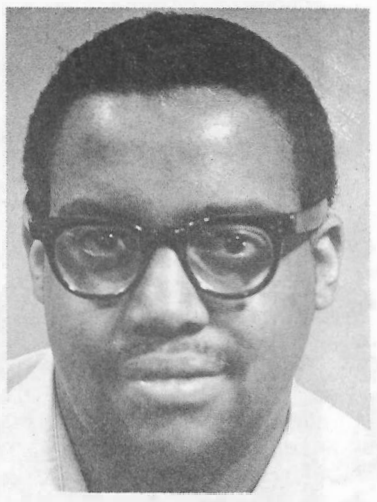
Change in Attitude

The biggest thing the NAL training program did for Landers was to change his attitude.

"My whole attitude changed at least 50 percent," he said. "The program changed my attitude toward work completely. The school gave me the mechanical ability to hold a good job."

Landers plans to stay with the NAL. "When this construction is finished in 1972, it will already be obsolete and we'll have to build a better accelerator.

"Science is moving so rapidly," he said. "I want to get more training so I can move into other



Halbert Landers

work when this is done." Landers feels he now has a job with a future. He wants to learn more about blueprint reading, the details of tool handling and machinery.

"We were trained for the job we would be doing here," Landers said. He was in the general mechanics section.

We studied small engines, welding, sheet metal pumps, pipe fitting and assembly work. The trainees were helping to build the school themselves. If some other section wanted a special box, then we would design it and build it," he said.

Teachers Praised

Landers spoke highly of some of the teachers. "Mr. (John) Leward and Mr. Jones were the best teachers there, I think" he said. "They really tried to help us and solve our problems."

Earned GED Also

While at the TAT school, Landers earned his General Educational Diploma (GED) the equivalent of a high school diploma. "It took my whole 20 weeks to do the work. I got it just before I left about June 23," he said.

"Miss Crowley tutored me. She was just great. She even drove me to the University of Tennessee for my GED test," he said.

Enjoyed Country

The biggest difference between Chicago and Oak Ridge is the atmosphere, Landers said. "It was so quiet and peaceful — not the hustle and bustle and noise of Chicago," he said.

"I liked the rolling hills and the mountains. Illinois is all so flat. I used to go out on the balcony at Charleston Hall and just look at the countryside. I miss that," he said.

People Welcomed Trainees

"The people really tried to make us feel welcome," Landers said. "They had picnics and parties for us and were very nice."

How does a young man from Chicago's inner-city feel about the federal government spending $250 million to build a testing ground for physics theories?

Landers says it's worthwhile. "They spend almost twice that much just for the one Saturn rocket which propelled the astronauts to the moon," he said.

Moves from Chicago

"Scientists from all over the world come here to do research. They will learn most about our world and that will lead to new knowledge that will be good for everyone," he added.

Landers lives in the NAL area about 30 miles west of Chicago now, and he plans to stay there. "I won't return to where I was in Chicago," he says.

Halbert Landers is assigned now to Main Accelerator group. He resides on Church Street in Batavia. He has signed up for evening classes at Waubonsee Junior College for the Fall semester.

RRW Briefs JCAE On NAL's Plans, Budget Needs

Dr. Robert R. Wilson, director, National Accelerator Laboratory, was invited to testify at hearings before the Joint Committee on Atomic Energy of the U.S. Congress on Thursday, April 17, 1969, in connection with the AEC authorizing legislation for Fiscal Year 1970.

Dr. Wilson appeared at the afternoon hearings which considered the appropriation levels for the AEC's physical research programs.

Also present were Dr. Paul W. McDaniel, director, AEC Research Division, who was accompanied by Robert F. Hollingsworth, general manager of AEC; John P. Abbadessa, AEC controller; Dr. Amasa S. Bishop, assistant director for controlled thermonuclear research, Research Division. AEC; Dr. Louis Rosen, Los Alamos Scientific Laboratory, Meson Physics Division Leader, and John Erlewine, assistant general manager for Operations, AEC.

JCAE Members

Members of the Joint Committee on Atomic Energy are Chet Holifield, California, chairman; John O. Pastore, Rhode Island, vice-chairman; Melvin Price, Illinois; Wayne N. Aspinall, Colorado; John Young, Texas; Ed Edmondson, Oklahoma; Craig Hosmer, California; William H. Bates, Massachusetts; John B. Anderson, Illinois; William M. McCulloch, Ohio; Richard B. Russell, Georgia; Clinton P. Anderson, New Mexico; Albert Gore, Tennessee; Henry M. Jackson, Washington; George D. Aiken, Vermont; Wallace F. Bennett, Utah; Carl T. Curtis, Nebraska, and Norris Cotton, New Hampshire.

Following is an edited text of the hearings concerning the National Accelerator Laboratory and the AEC's high energy physics research program:

Chairman Holifield. The committee will be in order. This afternoon we will start off by hearing from Dr. Paul W. McDaniel, director of the division of research, on the physical research program.

* * * *

Chairman Holifield. We are glad to have you with us. You may proceed.

Dr. McDaniel. Thank you. I have a few remarks summarizing our fiscal year 1970 budget request for operating expenses, capital equipment and construction projects. Following this summary, I shall highlight points of relevance within several of our major budgetary categories.

The fiscal year 1970 request for operating expenses is $282.3 million. This is an increase of $7.5 million, or about 2.7 percent over fiscal year 1969. Over 60 percent of the requested increase is required to support research and development activities for two major research facilities now under construction: The 200 Bev National Accelerator Laboratory and the Los Alamos Meson Physics Facility.

The $7.5 million increase breaks down into our major program categories as follows:

High energy physics	+$3,925,000
Medium energy physics	+1,615,000
Low energy physics	+205,000
Mathematics and computers	+55,000
Chemistry	+455,000
Metallurgy and materials	+250,000
Controlled thermonuclear research	+1,025,000
Total increase	+7,530,000

Our requirements for the fabrication and procurement of capital equipment continue to grow, and are directly related to the availability of complicated research tools, such as reactors and accelerators, increased complexity of research processes, and the requirement to analyze, assimilate, and interpret large quantities of statistical data. The request for capital equipment funds is $27.8 million. This is $12.3 million — 31 percent — below the amount available for the program in fiscal year 1969.

The request for line-item construction projects is $110.05 million. This total includes $3 million for accelerator improvements, $3.4 million for general plant projects, $2.65 million for a major modification of the heavy ion linear accelerator at Lawrence Radiation Laboratory, and $5 million to continue construction of the Los Alamos Meson Physics Facility.

The remaining $96 million is required for continued design and engineering services, procurement, and construction work on the 200 Bev. National Accelerator Laboratory. In addition, we are requesting full authorization of this facility in fiscal year 1970 at a total estimated cost of $250 milloin.

HIGH-ENERGY PHYSICS

The first of our major categories is high-energy physics, which, as presently defined, involves research in elementary particle physics at energies above 1 Bev.

The requested increase for high-energy physics operating expenses is $3.9 million or about 3 percent over estimated costs for fiscal year 1969.

200 Bev. National Accelerator Laboratory

The largest increase requested for high-energy physics — $3.1 million — is related to the 200 Bev. National Accelerator Laboratory. This increase will permit us to allocate $7 million (1) for research and development activities, which must be undertaken in order to support construction of the facility, and (2) for pre-operating R. & D. efforts required to facilitate timely use of the facility when completed.

The major R. & D. activities supported by these funds are the following:

Linear accelerator	$520,000
Booster synchrotron	910,000
Main ring accelerator	520,000
RF systems (booster and main ring)	320,000
Beam transport and targeting	650,000
Radiation physics	390,000
Accelerator theory	580,000
Research facilities (research equipment development, superconducting device design, small experimental program)	3,110,000
Total	7,000,000

Design of the accelerator facility is about 37 percent complete and essentially on schedule. Construction work on the linac housing — $1.8 million — was initiated in December 1968 and on the booster housing — $2 million — was initiated in February of this year.

Contracts Awarded

A contract for installation of rough roads in the amount of $544,000 was awarded in December 1968. A bid package is currently being developed for the Cross Gallery, a building closely associated with the linac housing and the booster housing and award of a contract is expected in the next few months.

Dr. Wilson and his staff have moved expeditiously in getting work under way in fiscal year 1969. To date, no technical problems are known which seem to be insolvable to Dr. Wilson and his staff.

We are reasonably confident that the accelerator, based as it is on conventional technology, will perform up to specifications. The performance of the National Accelerator Laboratory has been excellent and the Commission has been extremely pleased with it.

Dr. Wilson believes that the project can be built for the estimated cost of $250 million and that an initial beam can be obtained by June of 1972.

He points out, however, that everything depends upon the availability of adequate authorization and appropriations in fiscal year 1970. The Commission supports Dr. Wilson and although the schedule and cost estimate are tight, we have great confidence in Dr. Wilson's ability to meet his commitments.

May I pause at this moment and say that Professor Wilson is with us today. If the committee desires to hear from him more directly, I would be glad to yield.

Chairman Holifield.
I noticed he was in the audience and invite him to come up.

You are in a good position to do a little talking, Dr. Wilson. Why don't you tell us how you are getting along out there.

Wilson's Testimony

Dr. Wilson. I have distributed some pictures that I brought with me that may tell more about the project than words.

Chairman Holifield. Incidentally, Mr. Price would be here, and I am sure he wanted to participate in this part, but he has a speaking engagement before the American Oceanic Organization at noon. He will be here as soon as he can. He was out to see you just recently.

Dr. Wilson. That is correct. It was a very happy occasion when Glenn Seaborg received the site for the Atomic Energy Commission from the State of Illinois. We are delighted with the cooperation from the State in making pieces of ground available to us before that ceremony. We are happy that that commitment, however, has been fulfilled.

I was, of course, disappointed last year with $14.5 million. However, we are living within the limitations of that, and within those limitations I am very pleased at the progress we have been able to make.

One of our objectives was to get as much of the construction started as possible, and perhaps these photographs, will show that. They are numbered.

Figure 1 shows a view taken from an airplane of our construction site. It is looking down on the two buildings that are now underway.

Figure 1

You will notice that there is a large white scar in the foreground of the first photograph, which is the first road under construction.

Off to the right of that, you will see the linac building which was started about the first of the year, which is looming above ground now. The concrete under-structure is poured. Then in front of that there is a large round scar, typical of all synchrotron construction at this stage, where the booster synchrotron is being excavated.

Then you can see in the middle distance of the photograph some drainage ditches and a rough road which will give a rough idea of where the external beam will go, where the experimental areas will be located.

Chairman Holifield. It looks like you have a little water problem there.

Dr. WILSON. Exactly.

Chairman HOLIFIELD. The land is very flat.

Dr. WILSON. The flatness is at the same time an advantage and a curse. It is an advantage because we do not have to make extensive excavations. On the other hand, it is a curse because during the springtime, and at other seasons when it rains, the water just lies there. There is no place for it to go.

One of the things that we are doing, consequently, is to put in as many of the drainage ditches now as we possibly can. There is a lesson in that, too. We had planned to let the contract for the Cross Gallery, one of the buildings we are authorized to start this year, but we have been holding back on that building with the idea of spending some of that money for this necessary kind of site preparation, namely, for drainage, in order to make it possible for the workmen to continue to work and thus to keep on schedule. This should tend also to reduce the cost of later construction.

Figure 2

Figure 2 shows a closer or tighter view of the construction just described. It shows the linac and the excavation for the booster. You can see the large amount of construction equipment that is at work. It is a very busy place and we are very pleased with the construction men who are on the job. In spite of the difficulties with drainage and mud, they are right on schedule for the linac building.

Figure 3

Figure 3 shows a closeup of the linac building. The excavation has been finished and the base slab has been poured. Now the walls of the linac building are going up. You can also see the lovely forest in the background, which is one of the reasons we chose to place our central buildings here at this particular spot.

We are very happy, except for the difficulties with the drainage, about the way that this building is going up.

Representative HOSMER. These drainage difficulties are not insurmountable; are they?

Dr. WILSON. No. The snow has just melted. We had been particularly anxious to get the construction started early because we felt that winter would be a good construction period and we recognized that when the snow melted —

Representative HOSMER. It is not a type of problem that is going to involve you in any major additional construction costs?

Dr. WILSON. I do not foresee that. We had expected there would be some cost associated with this, and it is coming out the way we expected.

The next thing, apart from the construction, has been the design of the machine, itself, of the technical parts. In order to carry through these designs we had to have an operating laboratory. You may remember that last year when I appeared, our headquarters were in an office building 15 miles distant. Immediately thereafter, though, we did get access to the village of Weston on the site.

Continued Page 12

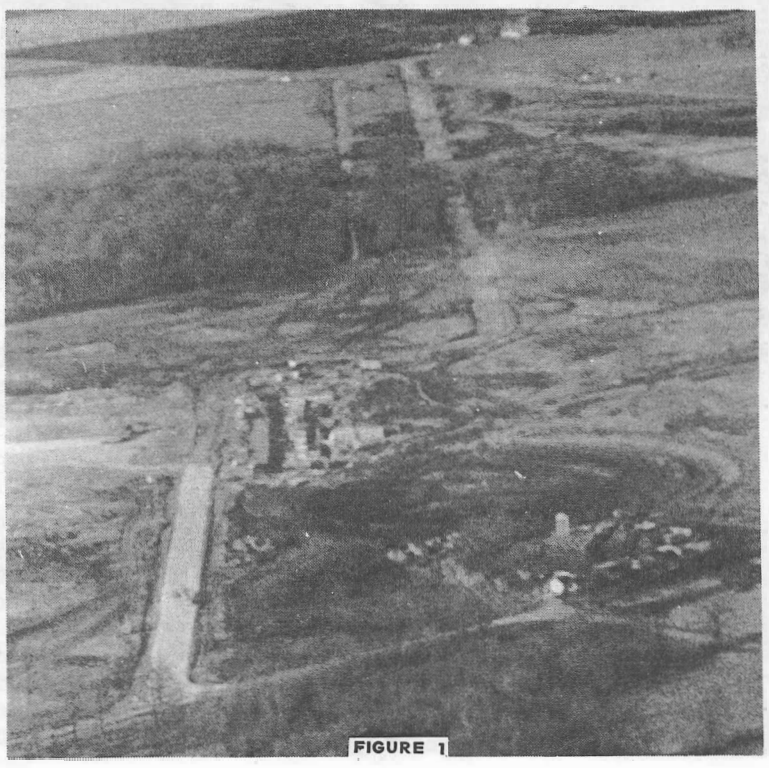


FIGURE 1

FIGURE 2

FIGURE 3

Wilson Testimony

(Continued from Page 11)

We moved in and started to convert the village into a laboratory. Figures 4 and 5, I hope, will illustrate how we have done that. It is in the laboratories shown in the pictures that we built, or are building, prototypes of the RF equipment, and in which we are building a 10-Mev prototype of the linac.

Figure 4

You can see the whole village n picture No. 4. We are still in the course of moving the little houses around to make effective office and laboratory space. It turns out that this is very economical space, and by placing the houses together, they are quite adequate for present needs.

Figure 5

The next picture (fig. 5) is a tighter view of what we call the industrial or laboratory complex. You can see about six Butler-type buildings there, one of which is a shop. You can also see a pressurized air building with which we were experimenting to see whether that kind of structure might be useful in the experimental areas.

It is supposed to be a particularly economical kind of building. It hasn't been particularly useful nor was it particularly cheap for our application.

Chairman HOLIFIELD. A little cold, too, I understand.

Dr. WILSON. Very cold during the Illinois winter, it turned out.

Chairman HOLIFIELD. If you had come to California, you wouldn't have had that problem.

Dr. WILSON. Adjacent to the inflated-air building, you will notice a prototype section of the main ring tunnel. It consists of two sections: the front part is made of concrete, the back part, the shiny part, is made of metal. This was an opportunity to test these differing kinds of materials by actually constructing about 100 feet of each.

Representative HOSMER. Doctor, what did you finally decide on after you had done this experiment?

Dr. WILSON. Well, we will go out for bids on both kinds of tunnels, and then we will decide on the basis of cost and time of construction. At present we are leaning toward concrete.

Representative HOSMER. They are equally satisfactory for your purposes?

Dr. WILSON. They are equally satisfactory. There are advantages and disadvantages to both of them. We now plan to decide this on the basis of which is the cheaper. However, we will have more experience as we go along that will help in making the choice.

We have built prototype magnets now and we will actually install such magnets in the prototype tunnel. We will be able to install one cell of the machine and also be able to power it electrically. Thus we will find out in many respects how the magnets are going to work and be able to solve many of the practical problems of handling the equipment within the tunnel.

The electrical equipment for the prototype will be installed in a typical service house, similar to the 24 which will be located around the eventual ring. You can see on the photograph that service house right behind the inflated-air building. It is the gray cinderblock house. Actual working prototypes of the electrical equipment will be installed in here so that the operation can be checked. Then when the bids are made, the fabricators will be bidding on components of which they can see a working model. Under these circumstances the bids should come in considerably cheaper than if the prospective suppliers have to do the technical development work themselves.

Chairman HOLIFIELD. How many miles of that tunnel will you have to build?

Dr. WILSON. Four miles. It is a long tunnel. An alternative possibility, I might add, is that instead of making it out of sheet steel, it may be made out of sheet aluminum. The aluminum fabricators turn out to be very interested in this project. We did not know of that soon enough, however, to include aluminum in the prototype.

Behind the air building you can see the laboratory in which we are constructing the linac prototype. That is for the first section of the linac. It will give 10 Mev. You can see that in the last picture, No. 6, which shows that interior of that building.

Linac Group

We have a very active, very capable group working on the linac. If you were there, as Mr. Price was a few days ago, you would see the men just swarming over this prototype. The picture was taken about 6 months ago and by now the area has become somewhat cluttered. It was rather clean then.

Representative HOSMER. Relatively speaking.

Dr. WILSON. Relatively speaking.

At present, behind the metal screen in the background — you can't see through that — there is a Cockcroft-Walton voltage device. That is working. They have had this up to a half million volts and expect to have it up to the full 750 kilovolts within the next few days.

The next thing will be to shoot those protons through the linac tank. We expect to have that working in June, actually giving a beam of 10 Mev protons on the site. Then we can build the rest of the linac on the basis of experience and not just on the basis of drawings and theories.

In a like manner, in the other buildings you would see developments that are similar to this. Prototype magnets of the booster synchrotron have been made. They, too, will be installed and tested in a prototype tunnel.

We have committed by now all the funds appropriated for this fiscal year and we will come out exactly even as of the end of the year. In the expectation of being able to commit substantial amounts for the project in fiscal year 1970, we have geared our organization to do just that. We now have the personnel. We have the designs. We are at the stage where several buildings and many of the technical components could be put out for bids immediately. We are entirely confident of our abilities to get this project really underway.

Representative HOSMER. Dr. Wilson, this experimental research and superconducting device design, what is that aimed at?

Dr. WILSON. This is aimed at the research devices to be used with this accelerator. Although the technology of superconducting magnets is not advanced enough to incorporate it in the accelerator itself, we have a few years before we build all of the magnets that will direct the external beam to different parts of the experimental areas.

These magnets could very well be made using superconducting techniques. Then there are the magnets in the research devices. We have every reason, in order to diminish our running costs and installation costs, to utilize superconducting techniques wherever we can.

* * *

Representative HOSMER. In your design you provide some extra straight sections to which additional power could be added later.

Dr. WILSON. That is right.

Representative HOSMER. Conceivably, how far could the power go up?

Dr. WILSON. We expect to be able eventually to go up to 400 Bev. or even higher. We have designed that capability into most of the components.

Representative HOSMER. Is there any incompatibility between your regular magnets and the magnets that might be added later?

Dr. WILSON. I do not foresee any incompatibility in being able to use superconducting magnets later. The point is that in an accelerator, the bending and focusing magnets must change from a low field to a high field rather rapidly, within seconds. On the other hand, in the external beam, the energy is set at a certain value and so the magnets there can be set at d.c. levels; they do not have to change.

The technology is such that one can build steady magnets using superconductors, but at present one cannot build superconducting magnets that give varying magnetic fields and that are sufficiently accurate.

Representative HOSMER. Do you know or can you speak to any possibilities of putting in this stretch capability to begin with, or at least part of it?

Dr. WILSON. Of course, in some measure we have done that in designing the capability to go to 400 or 500 Bev. into our magnets. I would be delighted to add the additional capability at the beginning rather than later on. It would mean supplementing our power supplies and perhaps some of the water cooling capability.

Representative HOSMER. And it would require money?

Dr. WILSON. And, it would require some money; yes, sir.

Representative HOSMER. Thank you.

Representative PRICE. Dr. Wilson, at the ceremony conveying by the State of Illinois the land to the Commission, how many acres have been conveyed at this time?

Dr. WILSON. I would have to ask my friend K. C. Brooks, who, I believe, is here. I see that Mr. Erlewine also has the numbers.

Mr. ERLEWINE. We have received deeds, 53 in number, that cover 5,471 acres, and additional deeds have been signed by the State of Illinois and are in the process of being recorded and on their way to AEC that cover 1,316 more acres. That makes a total of all but 13 acres of the 6,800.

Representative PRICE. What about the 13 acres? Are they essential to the operation? What effect would it have if these 13 acres were not acquired?

Mr. ERLEWINE. We will get the 13 acres, there is no question of that.

Representative PRICE. Are they in litigation or something?

Mr. ERLEWINE. No. Two of the lots concern the village of Weston where the village water supply is, and the negotiations are going on concerning that.

The third piece pertains to a right-of-way of Commonwealth Edison.

Representative PRICE. Are they situated in any way that they would delay construction or land preparation?

Dr. WILSON. No.

Representative PRICE. What would happen if Congress wouldn't get around to completing action on the appropriation bill of the Commission until practically the end of the session? We have had that experience before. What would happen if you were operating under a continuing resolution? What would be the situation?

Dr. WILSON. It would be very serious for us; however, we expect something of that kind to happen, so we are trying to be prepared. I believe that under a continuing resolution we could let contracts for comparable kinds and amounts of construction as have gone on before, if I understand it correctly. We have a number of buildings of that kind all set to go. I also believe we could keep on with our engineering and development activities at about the same level as before.

Representative PRICE. The reason I ask the question is because there is restrictive language in the appropriation bill of last year. How would you be affected by that restrictive language?

Mr. HOLLINGSWORTH. I believe it would have the net effect of slowing them down for those months in which we were waiting to receive the 1970 appropriation bill, to have the act passed.

Dr. WILSON. The most serious place we would be slowed down is in actual tunnel construction. We expected to get an early start on the main ring tunnel, the 4-mile one.

In order to keep on schedule, we intend to make it in one building season. The restrictive language, if still applicable, would delay us right through the dry season. We would hate to end up in a slough of mud later on. There is also the central utilities building that is ready to go and for which there will soon be an urgent need. Then there is the desperate need to order technical components now.

Representative PRICE. Mr. Chairman, I was amazed at the activity I saw at that site when I was there a week or so ago, not only the land preparation and

Continued Page 13

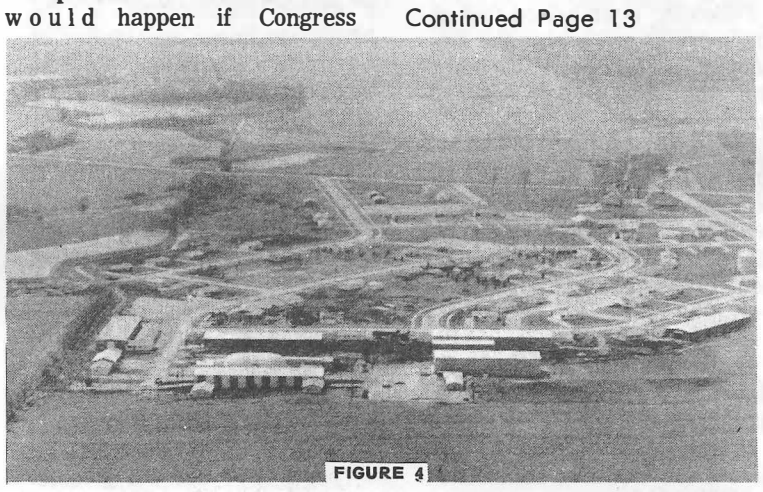


FIGURE 4

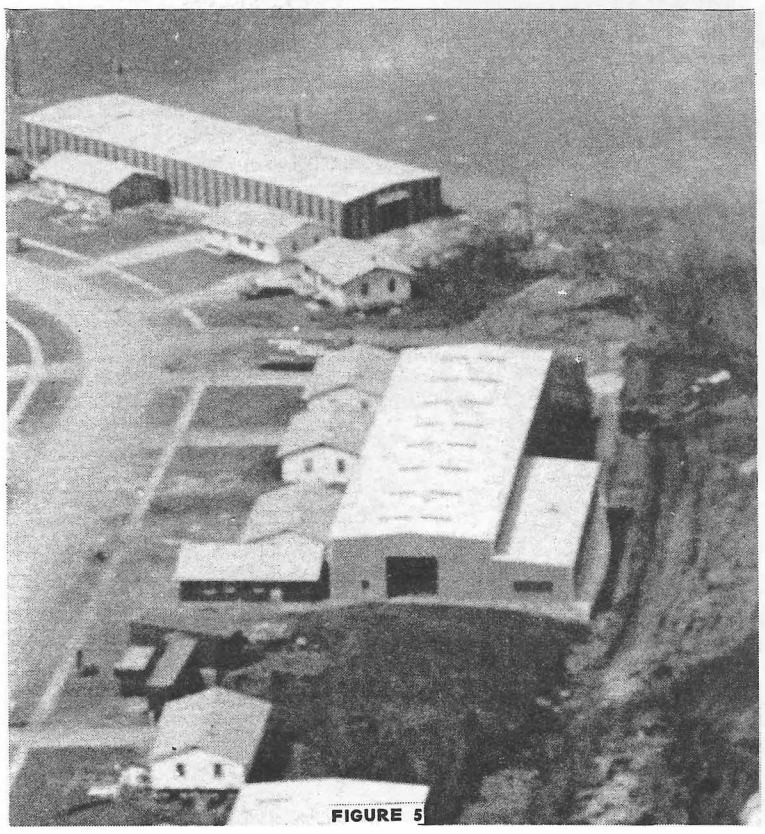


FIGURE 5

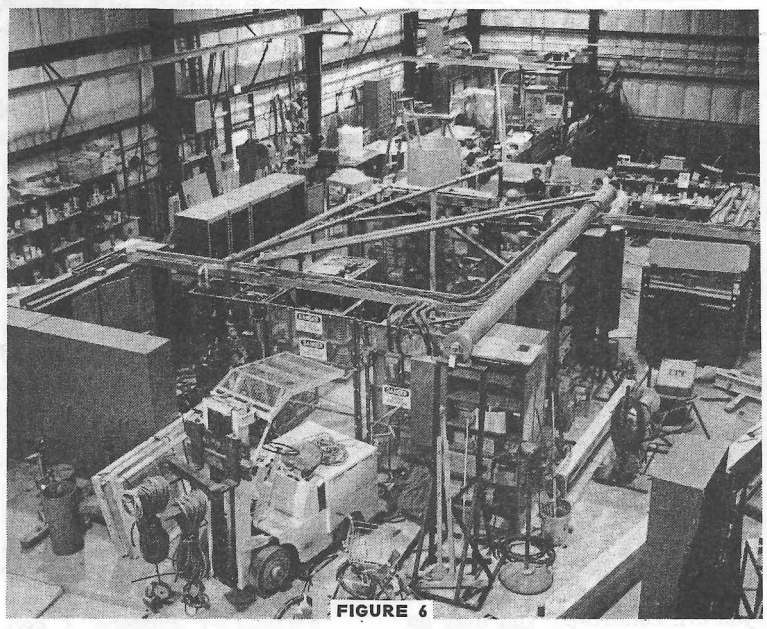


FIGURE 6

Wilson Testimony

(Continued from Page 12)

not only the temporary buildings, but the activities inside those buildings. I think Dr. Wilson and his organization certainly are due a great amount of credit for the way they have taken hold of this situation and moved it so rapidly.

Dr. WILSON. Thank you, Mr. Price.

I must say we owe a great debt of gratitude for much of this to the Atomic Energy Commission. Our friends there are really giving us excellent cooperation.

Representative PRICE. I think everyone involved has done a real fine job. I have never seen a project move as quickly as this one has since you were given the go signal.

Representative HOSMER. They have a good Director.

Dr. WILSON. I would like to pay special homage to Gerald Tape, who is just about to leave the Commission, for his guiding interest and his untiring efforts that have made the 200-Bev synchrotron project become a reality.

Chairman HOLIFIELD. We are expecting the same good job on this that we got from Dr. Panofsky at Stanford.

Dr. WILSON. It is very hard to live up to Dr. Panofsky's accomplishments.

* * *

200 BEV ACCELERATOR

Senator PASTORE. Doctor, I was not here at the beginning of your testimony, but let me ask you this question: When will the Enrico Fermi Accelerator at Weston be completed?

Dr. McDANIEL. The director of the laboratory believes that he will have a 200-Bev proton beam as of June 30, 1972. The physical construction is scheduled to be completed about 1½ years later.

Senator PASTORE. I know from your answer that you did not object to my characterization of the name.

Dr. McDANIEL. No, sir; I do not object to anything, if you will give me $250 million.

Senator PASTORE. That leads me to this question: You are asking for $250 million authorization for the completion of this 200 Bev?

Dr. McDANIEL. Yes, sir.

Senator PASTORE. As I understand it, the largest high-energy accelerator in the world is in Russia, today.

Dr. McDANIEL. Seventy-six Bev.

Senator PASTORE. Do we have any knowledge as to whether or not they are contemplating anything bigger than ours?

Dr. McDANIEL. We had a team visit the 76-Bev accelerator a few weeks ago, and they brought back a general picture that the Soviets are deeply engrossed in making the 76-Bev accelerator work.

They do, of course, have planning groups that talk in terms of larger accelerators — without the full authorization of the Soviet Government behind them. There are some people who say, "Yes, we are planning a 1,000-or 2,000-Bev machine."

But they would be in the same category as some of our people who say we are planning a 2,000-Bev machine.

Senator PASTORE. For the understanding of a layman, you are asking for $250 million to build a new accelerator. At the same time, you are saying you are closing down smaller ones because you say you don't have the money.

Does that mean we have graduated from the research being done in the smaller ones, and we have to go to the bigger ones?

Dr. McDANIEL. In a way, the answer is that the research work we were doing with the smaller accelerators is being superseded by some of the research work which needs to be done with the larger accelerators.

In a way, that is correct. Some of those machines that I named are in a different area of science than the high-energy physics. The Carnegie and Rochester machines are in the medium-energy physics. There we are closing them down because we have a shortage of funds for the Los Alamos Meson facility.

Senator PASTORE. That ought to be clarified for the record, because this gets us into trouble on funding.

The question is: Are we closing down these accelerators of smaller size because we don't have the money, or because they have become obsolete?

Dr. McDANIEL. Largely because we don't have the money.

It is a combination of the two factors, but on the basis of the shortage of funds, we are eliminating the less productive of them, of the machines.

Senator PASTORE. How do you justify this? How do you justify a request for $250 million, when we lack the funds and we are closing down accelerators that are still important?

Dr. McDANIEL. I still retain a great deal of faith and confidence that in the future we will find ways to finance this program to the necessary extent. We do project our cost figures at higher rates than we currently have.

I do believe that in the future we can and should provide this additional funding. It is confidence in the future, sir.

Dr. TAPE. Senator Pastore, I would modify this a bit, in the following way: With a machine such as the 200-Bev accelerator, there is no other facility that will serve as such a tool for these physicists to extend their research frontier. In the lower energy machines, there are other opportunities within the whole of the Government's research structure and the university research structure. So one gets into this question —

Senator PASTORE. Would you be a little more explicit about that?

Dr. TAPE. We can operate at lower energies with other machines, as Dr. McDaniel has said. A number of such machines have been operating for years; they have been very productive.

The machines are not obsolete when looked at from the point of view of still producing particles or radiations which are useful in producing useful research. But there are many categories of research that we would like to support, in fact more than we can afford to do. We are still going to put very high priority on the newer techniques and newer tools and, if necessary, we are going to pay a higher premium, let us say, to do that, even if it means closing down some of the older facilities. So it is obsolescence of a kind.

Senator PASTORE. How do we arrive at the figure of 200-Bev?

Dr. McDANIEL. That was arrived at sir by a panel of scientific people under Dr. Ramsey's supervision several years ago, that studied the field and the capabilities, the need.

For many years, it was called a "large" accelerator. The 200-Bev limit was placed on it in the Ramsey panel recommendations, based on strictly scientific evaluations.

Senator PASTORE. For the purpose of the record, are you prepared to say, or is this a fair question, what you expect to find through the 200-Bev?

Dr. McDANIEL. A better understanding of the subnuclear universe, is my general answer. My specific answer is we do not know what we will find, but we know there is a wealth of information there which needs to be developed.

Senator PASTORE. And with all these other priorities of hunger, underfeeding, underclothing, and underhousing, how do you justify $250 million at this time for building something with which we don't know what we are going to find?

Dr. McDANIEL. I would simply say as an individual that is a small amount in comparison to the total capacity of this country to feed the hungry and to clothe the naked.

Senator PASTORE. I don't like that answer, at all.

These are the arguments we get when we go before the Appropriations Committee, and it is usually my responsibility to carry the ball on this. I would like to have some definite answers here as to priorities, because that is going to be thrown right into my face.

Here we are. We have these Senators going all over the District of Columbia. It has been on the front pages. They are going all over the country showing how many people are starving, how many people are hungry, how many people live in rat-ridden houses.

Here we are, asking for $250 million to build a machine that is an experimental machine, in fundamental high energy physics, and we cannot be told exactly what we are trying to find out through that machine.

Dr. WILSON. Senator Pastore, I and my colleagues will be spending a good part of our lives building and using this machine. We have a deep and very personal commitment to it. May I try to explain what it is we are trying to find out.

We are building this machine for specific purposes as well as for general exploration. In the first place we expect to get answers to questions that men have been asking for a long time.

One of these questions has to do with simplicity. Is there a simple understanding of nature? Are there a few elementary particles which could explain all of the complexity of matter and of life?

Our present picture is one of tremendous complexity. You have heard about the hundreds of so-called "elementary" particles. But we believe that there must be an underlying simplicity, perhaps three sub-particles, or something of that kind, that will bring clarity and make that which is so complex now turn out to be very simple. Going to 200-Bev gives us a good chance to find such subparticles.

Understanding Forces

There is another aspect of our study. This concerns the different kinds of forces. Three of these are now quite familiar: gravitational forces, electromagnetic forces, nuclear forces. The understanding of these three forces has been all important to our past and will be all important to our future, to the future of all men. There is also a mysterious fourth kind of force called the "weak" force.

We know just enough about this weak force to expect that it may become stronger and stronger as the energy of the colliding particles is increased. We also now know that there are specific experiments that can be made which will tell us about the nature of this force as we move into the energy range that will be made available by our 200-Bev synchrotron. It has become perfectly clear to us that there are specific experiments that can be done with the 200-Bev machine that cannot be done with other machines, and which will give us definitive information about the "weak" force.

Now, forces, sir, are the movers of the atoms, the basis of all motion and hence of life and of technology. When I was a student, the nuclear force was considered to be an academic matter, a force which had nothing to do with our lives. We studied it only in a quest for simplicity, just for the pure understanding of it. It turns out that this knowledge has made vast amounts of energy available. A deeper understanding and a more fundamental understanding of the "weak" force could be as relevant to our lives as the other forces, not only in the gratification we will have in the knowledge itself, but in the technology that will inevitably come from that understanding.

Senator PASTORE. The thing that bothers me is that some of the same people who are looking for these unknown, imaginary forces that may be real, are the same people who are apposed to the ABM because they say it will not work.

What will work, and what will not work? You say that we are looking for something that will explain the forces of nature. Could you be a little more explicit about that? In what way will it affect nature, do you think?

Dr. WILSON. In looking for the nature of the forces that would hold the particles together in the nucleus —

Senator PASTORE. Why?

Dr. WILSON. We did find out how to control the nucleus, how to make nuclear energy. That is what this committee is all about. Nuclear energy has affected nature. One can see the possibility now of using nuclear forces for controlling our environment better than ever, for digging canals, or for preventing pollution. For example, I live in Chicago, and the more nuclear plants that are built near Chicago, the more bearable is the air that I breathe there. I can see a direct effect of nuclear energy in decreasing pollution.

We will also see a decrease in the cost of electricity, for all men, especially as time goes on. Because of the construction of cyclotrons in the past, we see these things coming to pass within our lifetimes. I am confident that in a similar way, as we learn about this weak force, we will ultimately understand more about the other forces and then be able to utilize them more fully. We know that this force, although mysterious, is just as real as the other forces, we know how to go about studying it, and that is what we are getting down to doing.

Had we not built those previous nuclear accelerators, we would not have nuclear energy today. We would have more pollution of the air we breathe because more coal would be burned, while it lasted.

Because of the kind of research that we are now starting, men will eventually be able to enjoy a richer life, in an intellectual and spiritual sense certainly, but also in their physical well-being.

Senator PASTORE. Is there anything connected in the hopes of this accelerator that in any way involves the security of the country?

Dr. WILSON. No, sir; I do not believe so.

Senator PASTORE. Nothing at all?

Dr. WILSON. Nothing at all.

Senator PASTORE. It has no value in that respect?

Dr. WILSON. It only has to do with the respect with which we regard one another, the dignity of men, our love of culture. It has to do with those things.

It has nothing to do with the military. I am sorry.

Senator PASTORE. Don't be sorry for it.

Dr. WILSON. I am not, but I cannot in honesty say it has any such application.

Senator PASTORE. Is there anything here that projects us in a position of being competitive with the Russians, with regard to this race?

Dr. WILSON. Only from a long-range point of view, of a developing technology. Otherwise, it has to do with: Are we good painters, good sculptors,

Continued Page 14

"But we believe that there must be an underlying simplicity . . . that will bring clarity and make that which is so complex now turn out to be very simple."

— RRW

Wilson Testimony

(Continued from Page 13)

great poets? I mean all the things that we really venerate and honor in our country and are patriotic about.

In that sense, this new knowledge has all to do with honor and country but it has nothing to do directly with defending our country except to help make it worth defending.

Senator PASTORE. Is there any necessity for pushing for completion of this accelerator so that you will have a beam by June of 1972?

Dr. WILSON. To me, it is like planting a tree. You know the story about the master who asked his servant to plant a tree in the afternoon. "I am too busy to do it then," said the servant, "besides, there is no hurry for it will take 20 years to grow." "In that case, plant it this morning," replied the wise master.

Senator PASTORE. When you consider priorities, I know exactly what you mean, provided we have the money.

After all, when you have people who are hungry, the big question here is: Is it more important to put a man on the moon, or to fill the stomachs of our starving children?

Dr. Wilson. It is most important to fill the stomachs of our starving children.

Senator Pastore. You would put that as the first priority, would you not?

Dr. Wilson. Yes, sir.

Senator Pastore. Of course.

Dr. Wilson. But it is also important to get on with the things that make life worth living, and, fortunately, it is possible to do these things in a manner which also contributes to the feeding of hungry children. We have seen great developments in the science of elementary particles in this country — a golden age of physics. We should not lose the tremendous momentum that has built up in this field. We should not pass up this opportunity. We have a great American tradition. The moment to move is here. We have the men who are ready and enthusiastic to get on with it. If we falter, I can see the whole effort dispersed and lost.

Senator Pastore. My experience has been it is easy to authorize, but hard to get the money.

Let me ask you this question: Why do we set this target date for June 1972? Could that be extended?

Dr. Wilson. Of course it could be extended.

Senator Pastore. How much harm would it do if you did?

Dr. Wilson. For one thing, it will cost more money. The extra money will take food away from the mouths of the babies in 5 years, unless they are then being adequately fed.

We have assembled a group of talented men, a group of just the right size, to do this job in this time. Now those men could easily take much more time. Their salaries will continue no matter what. It will just cost more.

But there is also a question of doing something with enthusiasm, which is how we are doing it, and with a determination to do it rapidly and economically.

If we are not to do it with enthusiasm and rapidly, then it can still be done, but it will be done by second-rate people in a bureaucratic manner and it will be done expensively.

Senator Pastore. I am going to make the same argument you are making now when I go into conference with the House, but you will be surprised how those ears are plugged.

I don't want to get into the academics of this, because after all I am supporting this accelerator. I don't want any misunderstanding. Especially if you call it the Enrico Fermi Accelerator.

I want a practical argument for when we get down for the funding of this, and someone says, "All right, it is authorized for $250 million, but you are asking for $96 million this year. If we made this $50 million, what would it do to you."

I want to get some answers. What would it do to you?

Dr. Wilson. It will have one effect: it will slow us down. When I was here last year, we asked for $75 million. Reason prevailed, and we came down to $25 million. We even accommodated to the $14.5 million we eventually received.

I am still determined, and my colleagues in the laboratory, to do the job on the 5-year schedule. However, now we are asking for $96 million in order to keep to that schedule.

Chairman Holifield. Is that to spend this year?

Dr. Wilson. No. That is to obligate. The spending will be somewhat less, of course.

Chairman Holifield. Now you are getting to it. What is your spending program? In other words, out of this $96 million authorization for the fiscal year 1970?

Dr. McDaniel. Estimated at about $20 million, sir.

Senator Pastore. The point is, unless you appropriate, you cannot obligate. That is the point. No matter what you spend, you have to have the authority to obligate, and that comes not from the authorization, it comes from the money.

Dr. Wilson. We need the obligational authority for $96 million. Our spending will be less than that.

Senator Pastore. In other words, we would have to appropriate the $96 million for you to carry out your job, no matter what you spent, because you will be obligating all that money, obligating $96 million which will be spent beyond this fiscal year.

Dr. Wilson. Yes.

Senator Pastore. You only expect to spend $20 million, but if we gave you a funding of $20 million, then you could obligate the $20 million, and that would throw it out of kilter.

Dr. Wilson. I am more optimistic about our ability to spend. I would expect to spend somewhat more than the $20 million. However, that is the figure that results from the customary ratio of costs and obligations.

Senator Pastore. Essentially, the major purpose of this bevatron is for fundamental high-energy physics research, which is an educational and academic process, is it not?

Dr. Wilson. And a cultural process, yes, but with the firm expectation that technological developments will come. Directly, but after a very long time; from the results of the research will come new technology. However, there will be a bonus that will come indirectly but very soon, through the technological inventions, that is "Spin-off," that results whenever such work is done.

Thus, because we are doing extremely difficult technical things, and because we are working in a strange kind of research, we know from past experience that new techniques inevitably develop, techniques which have paid, more than paid, for the cost of the basic research that was not pointed to such developments.

The klystron of the linac at Stanford, the vacuum pumps for the early cyclotron research, and the high-frequency oscillator tubes which were so valuable during the war, computer techniques, all these resulted from work on accelerators.

Senator Pastore. Would you say as far as you know, the whole scientific community is behind this, without a dissent?

Dr. Wilson. They do not dissent to me, sir.

Chairman Holifield. You know, Dr. Wilson, as I listened to your eloquent appeal for this, my mind went back before the days of Enrico Fermi to a time when St. Paul stood before King Agrippa, and King Agrippa said to St. Paul that he wanted him to explain his belief in the Christian principles. St. Paul was so eloquent that when he got through, King Agrippa said, "Almost thou persuadest me to be a Christian."

I am saying that, leaving out the "almost." I am saying, "Thou hast persuadest me to support this to the best of my ability."

Senator Pastore. That is fine, but I was not worrying about Agrippa. I was a little worried about the taxpayers a-griping.

Chairman Holifield. Then I think I should repeat for my colleague who sits on the Appropriations Committee, and anything that I can say that will strengthen his soul and purpose to where he can become as eloquent as I know he has been on many occasions, that I went through a little exercise when he was not here.

I want you to get the full benefit of it.

I had the morning Post before me, which said in a right-hand column that our gross national product this year would be over $900 billion. It went on to say that corporate profits in 1968 were the highest they had ever been in the history of this country, or in the world.

Senator Pastore. $51 billion, after taxes.

Chairman Holifield. And the per capita earnings of our people have gone up.

Senator Pastore. To $2,700 per year.

Chairman Holifield. Right. And that employment is at an alltime high.

Senator Pastore. 75.9 million.

Chairman Holifield. And unemployment is at an alltime low.

Senator Pastore. 2.8 million, or 2.6 percent.

I am making a speech Monday night. I know all of these figures.

Chairman Holifield. I have made this speech before a skeptical group of 400 big business people who thought we were in a financial crisis.

I can go on with some more, that the annual savings are the greatest they have ever been in our savings institutions in this country.

Therefore, I state unequivocally that we are not in a crisis, that this country is in a position to build a half dozen 200 Bev's, if we had the guts to go ahead, because we have the facilities to do it, we have the greatest productive machinery in the world.

I deny the fact that we are in a financial crisis. I say that about 98 percent of this financial crisis is hocum, and propaganda.

You use those figures you know so well when you get before your friends.

Senator Pastore. I know, but I wish you would talk to Wilbur Mills.

Chairman Holifield. I will.

Dr. Wilson. I wonder if I can say one last thing.

Chairman Holifield. Now that you are confirmed, you may go ahead.

Dr. Wilson. We do expect to pay our way, Senator Pastore. When we spend Federal money, the taxpayers' money, then we have an obligation to give a fair return immediately. One of the things that we are doing, I am sure, is near and dear to your heart. We are taking a very positive stand with regard to racial problems.

We have spent a large amount of time and effort on open housing. By now, essentially all of the communities in the vicinity of the project, some 20, have passed open housing legislation. We have instituted a training program in collaboration with Oak Ridge National Laboratory, where we have taken young men out of the inner city of Chicago. They came out to our laboratory for a period of orientation. Then we sent them to Oak Ridge for technical training. In 6 months, they will be back with guaranteed jobs, 23 young men.

* * *

Dr. Wilson. Twenty percent of our staff are nonwhite. We are going beyond that. Every time we let a contract, we have a prebid conference. We have Mr. Kennard Williams, our equal opportunity officer, read the law to the contractors. We have found them most cooperative, for they are anxious to see a solution to the racial problem too. We have also initiated a program of finding and then spending much of our money with small black industries. In other words, we are directly channeling some of that $250 million so as to help fill those hungry mouths you were describing.

Senator Pastore. I congratulate you.

Representative Price. You already have people from minority groups working on the site now?

Dr. Wilson. We certainly do.

Chairman Holifield. Senator Pastore was in the forefront of this principle, and fought for it from the beginning.

Senator Pastore. That was my only objection at the time.

Chairman Holifield. I know it. I sometimes think you objected in order to achieve the result that is now being achieved.

Senator Pastore. I hope I am just as successful on Enrico Fermi. I want to get these Congressmen off my back.

Chairman Holifield. You cannot get the Senator off the track. He is going to stay right with Enrico Fermi.

Senator Pastore. Thank you, Dr. Wilson.

"We know from past experience that new techniques inevitably develop, techniques which have paid, more than paid, for the cost of the basic research that was not pointed to such developments."

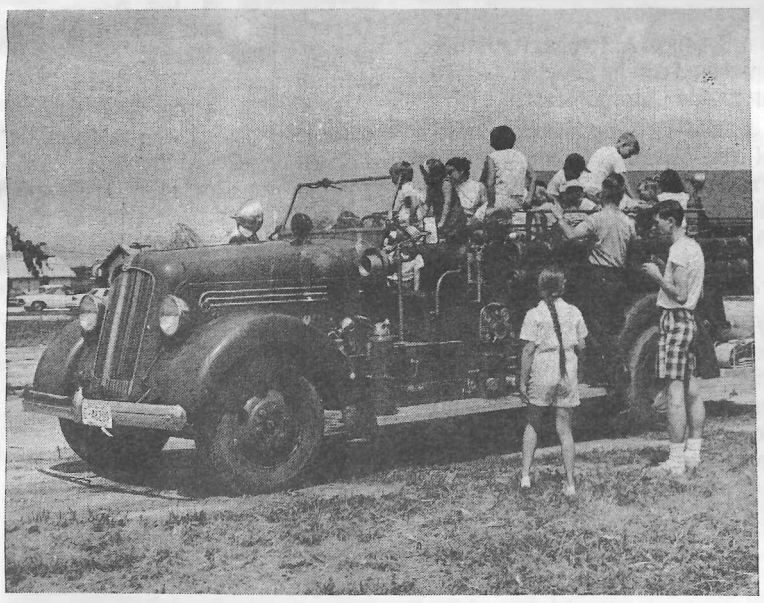
RRW

The NAL Village Bell rises to call staff members to seminars in the Curia. It is located on Shabbona, just west of the Director's office.

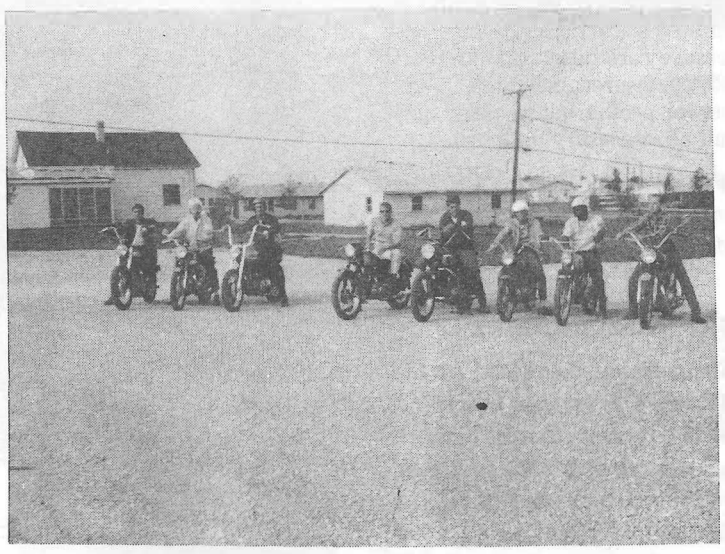
Every picnic must have a foot race. Here, future scientists of America dash off for the second annual NAL quarter-mile.

1969 The First Picnic In The NAL Village

The "junior miss" race got off in a lively spirit at the NAL picnic.



Children of NAL employees prepare for a free ride on one of the two Village fire engines which cover the site with the assistance of the Batavia, Ill., fire department.



On August 1, 1969, nine brave motorcyclists blazed a trail through the Laboratory land. Through tall grass, over the top of the storage hill (that may some day be a ski slope), into the Big Woods, through several empty barns, along the E J & E railroad tracks, sloshing through the mud along the new pipeline, all the pioneers returned safely to the Cafe on Che-Che Pinqua for snacks. Pictured above from left to right: Bill Carlson, Larry Semsch, Bob Hodge, the missing Jim Wendt, (who had to get gas,) Rich Janes, Don Richied, Chuck Schmidt, Gerry Reid and Larry Grady.

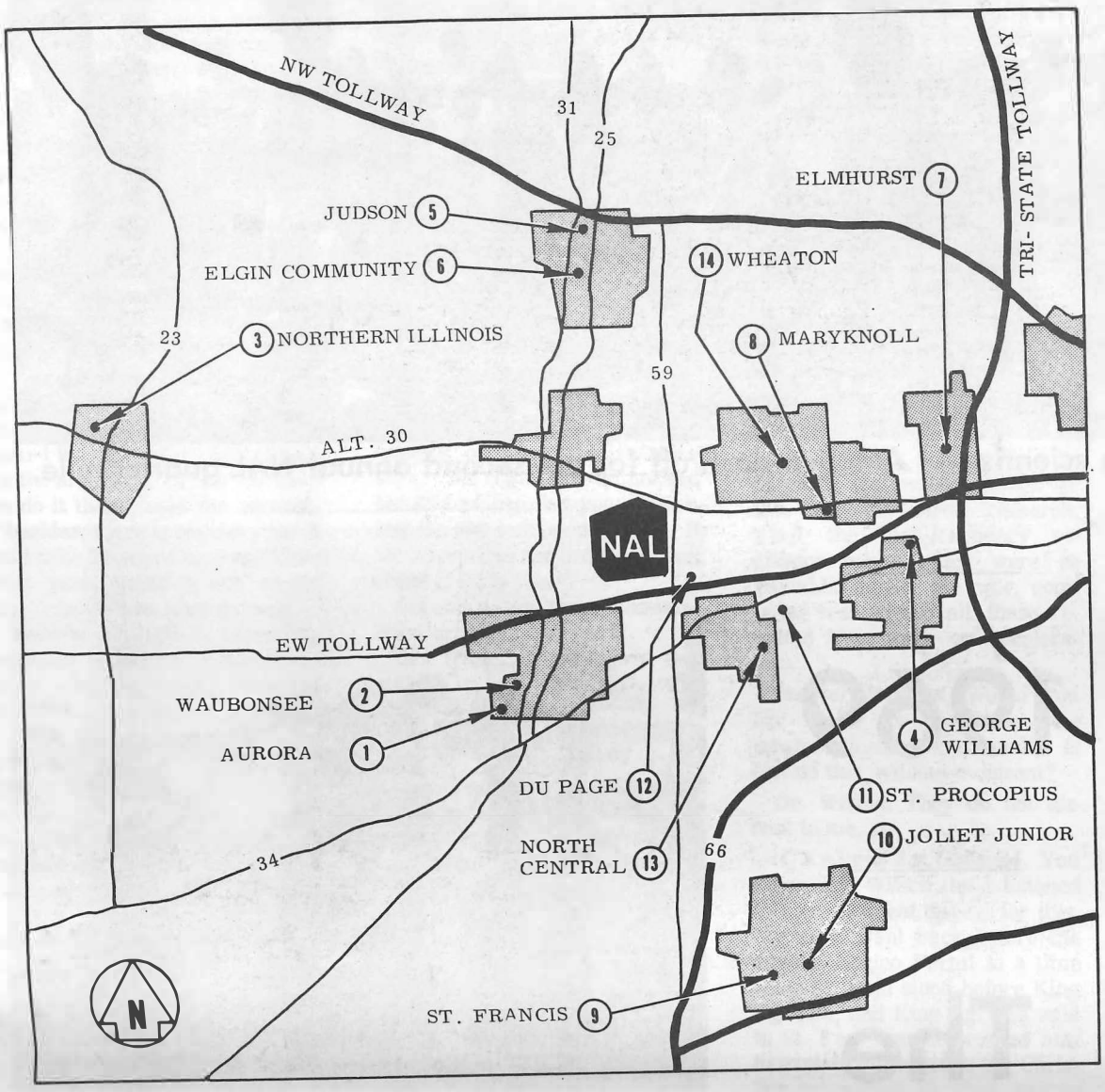
The NAL summer, 1969, picnic was held Sunday, August 10, on the grounds of NAL Village. Here, children of NAL employes enjoy a ride on a farm wagon pulled by an NAL van. Chuck Marofske, NAL Personnel, sits as a "chaperone" at the rear of the wagon. He is the bespectacled man with a pipe.

Bernie Lensmeyer supervises as Don Richied passes out the goodies.

Newspapers, radio and television and "just plain folks" were impressed by the unusual, rural summer camp operated on the NAL site by Herbert Nadelhoffer, a member of the suburban Woodridge school board who is pursuing his Ph.D. in Education at Northwestern University. It was known as "A. Frogg's Farm" and was located on the former Eric Schwahn farm on the southwest section of the site. Here, boys and girls enrolled at the camp are at play during a morning session.

Photos by Tony Frelo

Colleges near NAL



KEY

1 Aurora College
Dr. James Crimi, President
347 Gladstone Avenue
Aurora, Illinois 60507
897-9246

2 Waubonsee Community College
Dr. James H. Nelson, President
15 South Lake Street
P. O. Box 431
Aurora, Illinois
892-8731

3 Northern Illinois University
Dr. Rhoten A. Smith, President
DeKalb, Illinois 60115
815-753-1000

4 George Williams College
Dr. Richard E. Hamlin, President
555 31st Street
Downers Grove, Illinois 60515
964-3100

5 Elgin Community College
Gil I. Renner, President
373 East Chicago Street
Elgin, Illinois 60120
695-4870

6 Judson College
Dr. Amos B. Barton, President
1151 North State Street
Elgin, Illinois 60120
695-2500

7 Elmhurst College
Dr. Donald C. Kleckner, President
190 Prospect
Elmhurst, Illinois 60126
BR9-4100

8 Maryknoll College
V. Rev. Charles Kenny, President
Glen Ellyn, Illinois 60137
HO9-4500

9 College of St. Francis
Sister Anita Marie, President
Wilcox and Taylor Streets
Joliet, Illinois 60435
815-726-6228

10 Joliet Junior College
Elmer W. Rowley, President
207 East Jefferson Street
Joliet, Illinois 60432
815-727-4681

11 St. Procopius College
Rev. Roman S. Galiardi, D.S.B., Pres.
Lisle, Illinois
968-7270

12 College of DuPage
Dr. Rodney Berg, President
29 W 235 Ferry Road
Naperville, Illinois 60540
355-7900

13 North Central College
Dr. Arlo L. Schilling, President
30 North Brainard Street
Naperville, Illinois 60540
355-5500

14 Wheaton College
Dr. Hudson Taylor Armerding, Pres.
501 East Seminary Street
Wheaton, Illinois 60187
682-5000

NAL Plans Seminar For Youth Conference

The 1969 National Youth Conference on the Atom will be held in Chicago this year at the Sheraton-Chicago Hotel Thursday through Saturday, October 23-25.

To date, over 60 companies are planning to participate in the conference. The total attendance, including students, teachers, company representatives, media representatives and observers, is expected to reach 800.

A number of noted United States scientists have agreed to appear on the program which will include a tour of the Laboratory for approximately 100 young people.

Five NAL staff members have accepted the invitation to become discussion leaders and initiate discussion on any topic of scientific interest they choose, inviting participation from the 20 to 25 students in their individual groups.

The five NAL members who will be conducting seminars and the topics they have chosen to discuss are:

1. Donald C. Young, Linac Section Leader, "High Energy accelerators—How high?"

2. Paul J. Reardon, Booster Section Leader — "A Comparison of the Macroscopic and Microscopic Features of the Universe"

3. Ernest I. Malamud, Physicist with the Main Ring Section — "Experimental Studies of Strong Interactions"

4. Quentin A. Kerns, Radio Frequency Section Leader — "The Atom and Communication"

5. Lee C. Teng, Section Leader of the Theory Group — "The Framework of Modern Physics — How it Differs from that of Classical Physics"

The theme of the conference is "The Structure of Man's World." This theme proposes to emphasize discussion of those studies which reveal the structure of the atmosphere, the oceans, land formations and an inventory of resources of interest to man.

Topics to be covered include dynamic structure of the atmosphere, the interaction of the atmosphere and the ocean, oceanography, remote sensing techniques and their use in inventories of crop and wildlands, continental drift and earth crust dynamics, as expressed in subocean geology and earthquakes.

Dr. R. Christian Anderson, assistant director for scientific personnel, Brookhaven National Laboratory, is again serving as scientific consultant to the Youth Conference. Albert V. Hartl, president, Otter Tail Power Company and chairman of the Steering Committee, Electric Companies Public Information Program, is general conference chairman.

Dr. Glenn T. Seaborg, Chairman of the U. S. Atomic Energy Commission, has been invited to be the Keynote Speaker at Conference reception and banquet on Friday evening.

James P. Ekberg Promoted

Donald K. Poillon, Director of Business Administration, has announced the promotion of James P. Ekberg to Chief Accounting Officer of the Laboratory effective August 1, 1969. Mr. Ekberg joined the Laboratory on November 18, 1968 as the Senior Internal Auditor, and since that time has been involved principally in systems development of the Accounting Department and other special projects. The Ekberg family resides in Lombard, Illinois.

Mr. Ekberg will replace Charles J. Daley who resigned as Laboratory Controller to accept a position as Controller-Treasurer and Assistant Secretary of the Pulte Home Construction Corporation of Chicago, Illinois. Prior to joining the Laboratory in mid-August 1967, Mr. Daley, a graduate of Villanova University and a member of the New York and Illinois Societies for Certified Public Accountants, was Assistant Fiscal Officer at Brookhaven National Laboratory for five years. Daley lives in Itasca with his wife and six children.


James P. Ekberg


Charles J. Daley

Tuition Refund Plan For NAL Employees

NAL sponsors a liberal program for further development of its full-time regular and term employees. Many public and private institutions of higher education are located in less than 45-minute driving time from the Laboratory site. The above map shows the locations of most of them.

Charles F. Maroske, NAL's Personnel Manager, advises that any degree program or formal course which the Laboratory deems appropriate and pertinent to the employee's career at NAL will be approved for reimbursement. Reimbursement is contingent upon the receipt by the employee of a passing grade acceptable by the school for credit or a statement of satisfactory completion from the school. Full reimbursement will be made for tuition, text books, laboratory fees and like expenses minus any other reimbursement payments received by the employee towards the cost. Employees may obtain Education Support Requests from the Personnel office for submission to their Section Leaders.

* * *

(Note: St. Dominic's College, in nearby St. Charles, also has scheduled a varied program of adult education classes for the coming year. St. Dominic's plans to end its operations as a college at the end of May, 1970.)

NAL Radiation Safety Policy

The following statement on the Radiation Safety Policy of the National Accelerator Laboratory was issued by Robert R. Wilson, NAL director, on July 10, 1969:

1. Protons shall not be accelerated unless there is a good use for them.

2. No person shall be exposed to radiation unnecessarily.

3. Maximum personnel radiation doses shall be limited to those maximum permissible doses set by the Federal Government. *

4. During normal operation of the accelerator, external proton beam, and experimental areas, radiation workers shall receive only a fraction of the maximum permissible doses.* Thus, the workers will be available for necessary accelerator maintenance.

5. The radiation levels in off-site areas and on-site areas open to the public, as well as general offices, shall not be greater than the limits set by the Federal Government. *

6. The beam dumps, accelerator, and external proton beam enclosures shall be so designed that normal radioactivation of the soil, known hydrology of the site, and foreseeable rainfalls will not contaminate waters leaving the site boundaries above the maximum permissible levels set by the Federal Government.*

7. Proton beam spills shall be limited so that the remanent exposure rate inside the accelerator enclosures, including the external proton beam, shall permit all necessary maintenance.

*(*U.S. Atomic Energy Commission Manual, Chapter 0524, Standards for Radiation Protection.)*

* * *

Eola Road Gates

The gates on Eola Road, on the NAL site, will be open henceforth Monday through Friday between the hours of 7:30 a.m. to 9 a.m. and from 5 p.m. to 6 p.m. The gates will be closed at all other times.

* * *

NALites Engaged

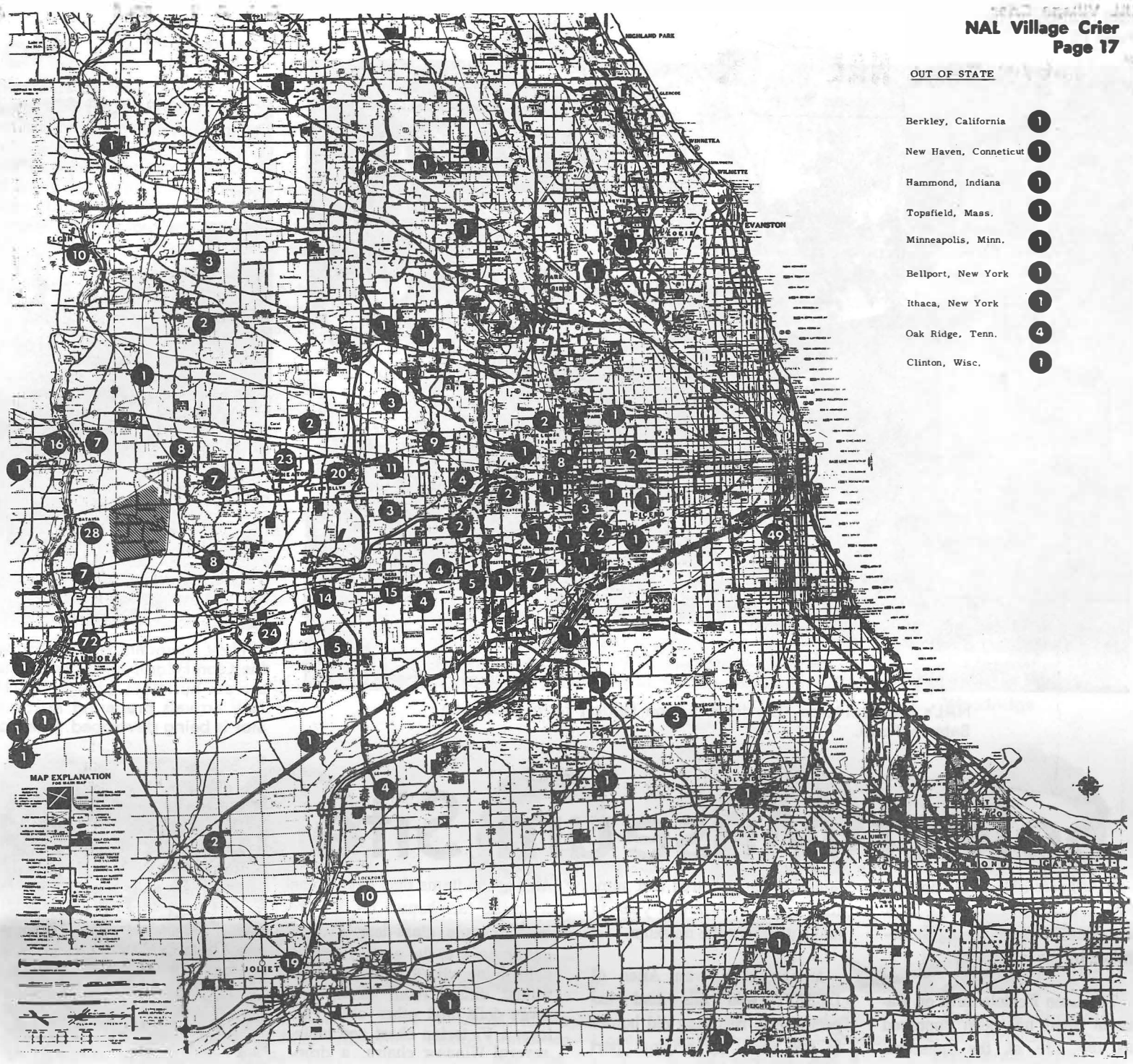
NAL Personnel Department is happy to announce the engagement of Miss Loine Riggs and Mr. Robert Hively. Bob is a Technician in the Radio Frequency Section. Congratulations!

Zip Codes

To speed the NAL mail, the Zip Codes for various cities, towns and villages in the Laboratory area provided below. It is suggested that you post these Zip Codes in your offices for future reference.

ZIP CODES

Addison	60101
Arlington Heights	6004-08
Aurora	60504-07
Barrington	60010
Bartlett	60103
Batavia	60510
Bellwood	60104
Berwyn	60402
Bolingbrook	60439
Boulder Hill	60538
Broadview	60153
Brookfield	60513
Carpentersville	60110
Chicago	60601-99
Cicero	60650
Clarendon Hills	60514
Downers Grove	60515
Elburn	60119
Elgin	60120
Elmhurst	60126
Elmwood Park	60635
Forest Park	60130
Geneva	60134
Glendale Heights	60137
Glen Ellyn	60137
Hickory Hills	60457
Hinsdale	60521
Homewood	60430
Itasca	60143
Joliet	60431-36
Justice	60458
LaGrange	60525
LaGrange Park	60525
Lemont	60439
Lisle	60532
Lockport	60441
Lombard	60148
Lyons	60534
Maywood	60153
Melrose Park	60160-65
Merrionette Park	
Montgomery	60538
Morton Grove	60053
Mount Prospect	60056
Naperville	60540
Neward	60541
New Lenox	60451
Niles	60648
North Aurora	60542
North Riverside	60546
Oakbrook	60521
Oak Lawn	60453-59
Oak Park	60301-05
Palos Heights	60463
Park Forest South	60466
Plainfield	60544
Prospect Heights	6070
Riverside	60546
St. Charles	60174
Somonauk	60552
South Holland	60473
Streamwood	60103
Villa Park	60181
Warrenville	60555
Wayne	60184
West Chicago	60185
Westchester	60153
Western Springs	60558
Westmont	60559
Wheaton	60187
Winfield	60190
Wood Dale	60191
Woodridge	60515
Yorkville	60560

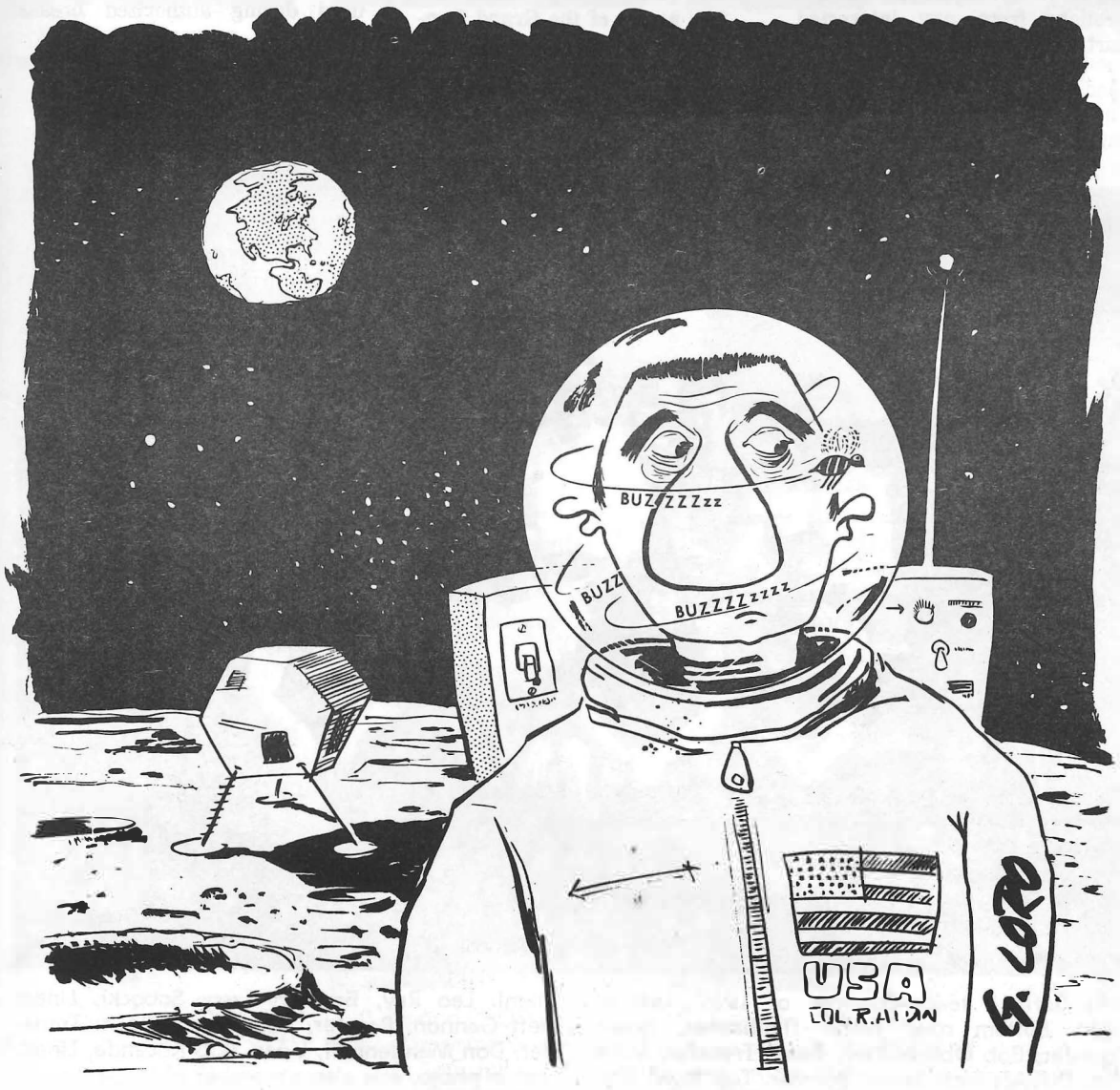


OUT OF STATE

Berkley, California	1
New Haven, Conneticut	1
Hammond, Indiana	1
Topsfield, Mass.	1
Minneapolis, Minn.	1
Bellport, New York	1
Ithaca, New York	1
Oak Ridge, Tenn.	4
Clinton, Wisc.	1

Map by Geno Loro

Stray Particles By Geno Loro, DUSAF



"These Quarks from NAL Village are noisy tonight."

Where We Live

—In 84 'Villages'

NAL staff members now reside in 74 cities, towns, villages, and rural areas in the Chicago metropolitan area and in 9 cities outside of Illinois (mostly in the process of re-locating). The map above and the list below cover persons hired through the period ending July 31, 1969 and was prepared by Mrs. Gloria Moore, Personnel:

Addison	3	Lyons	1
Arlington Heights	1	Maywood	8
Aurora	72	Melrose Park	2
Barrington	1	Merrionette Park	1
Bartlett	2	Montgomery	1
Batavia	28	Morton Grove	1
Bellwood	1	Mount Prospect	1
Berwyn	1	Naperville	24
Bolingbrook	1	Newark	1
Boulder Hill	1	New Lenox	1
Broadview	1	Niles	1
Brookfield	1	North Aurora	7
Carpentersville	1	North Riverside	3
Chicago	49	Oakbrook	2
Cicero	1	Oak Lawn	3
Clarendon Hills	4	Oak Park	2
Downers Grove	15	Palos Heights	1
Elburn	1	Park Forest South	1
Elgin	10	Plainfield	2
Elmhurst	4	Prospect Heights	1
Elmwood Park	1	Riverside	2
Forest Park	1	St. Charles	7
Geneva	16	Somonauk	1
Glendale Heights	2	South Holland	1
Glen Ellyn	20	Streamwood	3
Hickory Hills	1	Villa Park	9
Hinsdale	5	Warrenville	8
Homewood	1	Wayne	1
Itasca	1	West Chicago	8
Joliet	19	Westchester	2
Justice	1	Western Springs	1
LaGrange	7	Westmont	4
LaGrange Park	1	Wheaton	23
Lemont	4	Winfield	7
Lisle	14	Wood Dale	1
Lockport	10	Woodridge	5
Lombard	11	Yorkville	3

NAL's Museum-to-be: The former Leon Feldott farm house, on Batavia Road.

New members of the "growing" NAL family are residing in the Leon Feldott farm barn on Batavia Road on the NAL site. They are six buffaloes brought to NAL from Colorado. Here are three new arrivals preparing to roam the proton range as the accelerator is being developed. (See story on Page Six.)

Select Museum Site

A 100-year-old farm on the NAL site will be the setting for a historical museum being established by the laboratory.

The Leon Feldott farm on Batavia Road has been approved as the site of the museum, which will contain exhibits showing what life was like in the area before the NAL. Donald R. Getz, Assistant Director of NAL, says he hopes the museum will be open in the fall.

The farm house, barn and smaller buildings will house old farm furnishings, tools, and machinery, as well as an Indian arrowhead collection, according to Karyl Louwenaar, summertime administrative assistant for the Public Information Office. Miss Louwenaar did a historical study on the site area last summer and returned this year to make plans for the museum.

According to Ivan Alten of DUSAF, who has had experience in restoring old homes in the east, the original part of the house dates from about 1855 or 1860. It is an interesting example of Greek Revival architecture, though a later addition represents the Victorian Revival period, as evidenced by the home's two front porches.

Although funds would not be available for a complete restoration of the house, some will be done, and the attempt will be made to decorate it in as authentic a way as possible. Angela Gonzales, NAL artist, is a consultant for the decorating.

Among the items that have come from the farmhouses on the site are: a triple glass-door cabinet dating back to the early 1920's, a homemade wheelbarrow, a large walnut dining room table, two large dolls and other children's toys, a Victorian chest and table, several Windsor chairs, a drop-leaf table, china, old newspapers with World War II headlines, some farm equipment, many books and several Bibles — one written in Swedish and one in Danish.

Laboratory employees who are interested in and/or have experience in restoring antiques, furniture, etc., and who would like to help with the museum, are asked to contact "Spike" Severance, Public Information, who will be in charge of the project after September 1. Suggestions from any interested parties are welcome.

KARYL LOUWENAAR

Among NAL's 1969 summer employees was Miss Karyl Louwenaar, who was assigned to a research project on the history of the NAL site and its former residents.

An alumna of Wheaton College, Miss Louwenaar returned to her doctoral studies at the Eastman School of Music, The University of Rochester, N.Y., in September. She is a native of the Grand Rapids, Mich., area.

Recreation Facilities Expanded

As the NAL staff increases, so do the recreation facilities for employees. The dust has finally settled on the new baseball diamond opposite the Cafeteria and it is ready to be used for practice sessions or just for "batting it around."

Two tennis courts are avilable for the budding Wimbledon stars — bring your own rackets and balls.

Equipment for badminton, volley ball, horseshoes, football and softball may be signed out from the Cafeteria, in exchange for your I.D. card, and the pool table, shuffle board and ping pong table in the recreation hall may be used during authorized breaks and off-duty hours.

Sports Round-Up

Bowling

The BOWLING TEAM got off to a glorious start on September 5th. Don Richied and Gerry Reid, Co-Chairmen, are predicting a fantastic year in the League. Bob Wagner, DUSAF, is Secretary-Treasurer and Gayle Notley will be Corresponding Secretary.

Golf

DIE HARD GOLFERS SWEAT IT OUT!!

They made it through rain and wind storms plus the ever-present humidity! These stalwarts of NAL fought each other for thirteen grueling Wednesday evenings — Our golf league started off with two flights but soon dwindled down to one flight of eight teams. They were Earl Bowker and John Burdette; Harry Barber and Tom Borak; John Schivell and Erich Laukant; Will Hanson and Hank Hinterberger; Crystal Schivell and Ralph Stegman; Ryuji Yamada and Art Streccius; Aspasia (Epsie) Georgoulakis and Helen (Spike) Severance; Jose Poces and Tony Frelo. These last two were "green-beans" to the game but managed to show the most improvement over some of the old-timers.

Total team scores are being worked on and the winner will be announced shortly (slow working secretary). A luncheon is planned for an award ceremony get-together the latter part of September. We are looking for a full two-flight league next summer, so put it on your calendar.

Softball

Since the last issue of the Village Crier, the NAL SOFTBALL TEAM has completed its season of eighteen games with a record of 6 wins and 12 losses. Many of the losses were mighty close, but since that only counts in horseshoes, we'll have to wait until next year when we hope the LAB-MEN will be leading the League! With the ball field in the Village completed, there will be ample opportunity for after work practices for the fellows who are planning on coming out for the team next year. Leo Ray, this year's manager, anticipates a large turnout in the spring.

NAL Softball team—Summer of 1969. Left to right: Bottom row: Frank Thalhauser, Beam Transfer; Bob Oberholtzer, Beam Transfer; Mike Hitt, DUSAF; Rich Janes, Booster. Top Row: Bob Wagner, DUSAF; Reid Rihel, Village Management; Leo Ray, Booster; Larry Sobocki, Linac; Jeff Gannon, Booster; Bob Scherr, Beam Transfer; Don Mendenhall, Linac. Bob Kocanda, Linac, not in photo, was also a member of the team.

NAL Photo Album

There are nearly 500 members of the National Accelerator Laboratory family on the payrolls of the various scientific, technical and administrative sections of the Laboratory as of September 1, 1969.

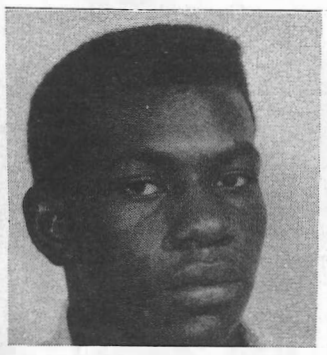
The following pages are devoted to photographs and addresses of recently-employed members of the NAL family. These pages supplement the Village Directory issued by NAL last Spring. It is suggested that these pages from the Village Crier be inserted toward the back pages of the Village Directory for periodic referral and safe-keeping.

From time to time, the Village Crier will devote space to new members of the NAL family. The photos reproduced herewith cover employees added during the period approximately from February 1 to approximately June 30, 1969.

James B. Achepe
Engineer—Booster
4930 South Woodlawn
Chicago

Joyce J. Adams
Clerk—Booster
26 West 360 Harrison
Winfield

Samuel H. Alexander
Instrumental Machinist—
Technical Services
736 North Van Buren
Batavia



Gene Anderson
Laboratory Assistant—Booster
1816 South Troy
Chicago

Susan J. Anderson
Secretary—Radio Frequency
1616 Marywood, Apt 104B
Aurora

Edwin J. Arko
Technician—Booster
325 Fairfax
Lockport

Francis W. Ascolese
Engineer—Booster
1110 East Willow
Wheaton

Carol Ashby
Secretary—Contract
Administration
275 Holmes
Clarendon Hills

Joanne C. Baaske
Clerk—Accounting
7622 Sprucewood
Woodridge

C. Leon Bartelson
Senior Technical Aide—Beam
Transfer
5924 Woodword
Downers Grove

George H. Biallas
Engineer—Main Accelerator
737 Lincoln
Geneva

Roger Braun
Warehouse Man—Material
Services
Route 1, Box 38
Warrenville

Donald R. Breyne
Design Draftsman—Linac
627 Pine
Aurora

Fred H. Browning
Senior Draftsman—Booster
321 Ryerson, Apt. 4
Elgin

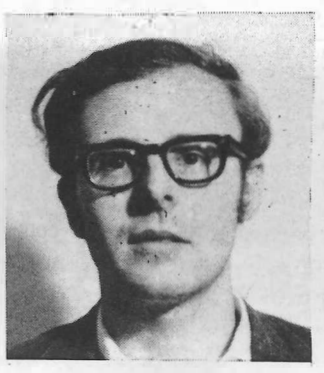
Delwyn A. Burandt
Senior Technical Aide—
Experiental Facilities
4940 West 91st
Oak Lawn

Warren F. Cannon
Personnel Administrator—
Personnel
647 North May
Aurora

Donald C. Carpenter
Technical Aide—Beam Transfer
1202 South Madison
Lockport

Frank L. Cesarano
Warehouse Man—Material
Services
5928 Woodward
Downers Grove

Larry D. Chiplis
Machine Shop Assistant—
Technical Services
237 South Harrison
Batavia

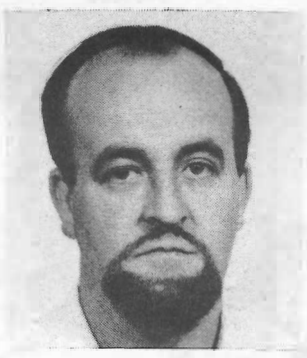


Lawrence F. Crane
Technician—Beam Transfer
127 Logan
Geneva

Anthony R. Donaldson
Engineer—Linac
R.R. 2, Bluff Road
Lemont

Ruth I. Druschel
Clerk—Accounting
1880 Lilac
Aurora

David P. Eartly
Physicist—Experimental
Facilities
10 Roselawn
Hammond, Indiana



George Eastland
Instrument Machinist—
Technical Services
1394 Monomoy, Apartment A
Aurora

Ronald W. Fast
Physicist—Experimental
Facilities
85 Woodland Hills
Batavia

Charles W. Foulke
Technician—Main Accelerator
1616 Marywood, Apt. 103A
Aurora

William O. Fray
Clerk—Technical Services
423 Woodward
Geneva

Joel G. Friedl
Draftsman—Beam Transfer
5242 Harvey
Western Springs

Raymond C. Gailey
Senior Draftsman—Beam
Transfer
185 Vernon
Bolingbrook

James V. Gianukos
Engineer—A-E & Site Planning
5523 Main
Morton Grove

Martin C. Glass
Technical Specialist—
Experimental Facilities
756 Riedy
Lisle

Lawana Gordon
Clerk—Planning & Scheduling
831 Parkside
Streamwood

Richard H. Gorski
Instrument Machinist—
Technical Services
442 Davis
Batavia

Warren L. Gottwald
Contract Administrator—
Contract Administration
R.R. 2, Box 50-A
Plainfield

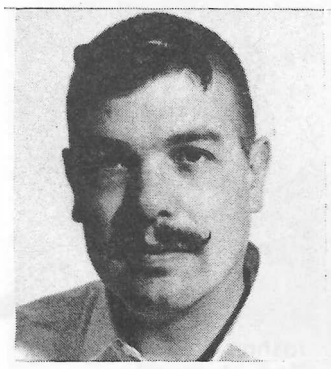
Johnny B. Green
Laboratory Assistant—
Main Accelerator
3919 South Federal
Chicago

Margaret Green
Clerk—Booster
505 Heustis
Yorkville

Charles P. Grozis
Draftsman—Radio Frequency
362 Hilltop
North Aurora

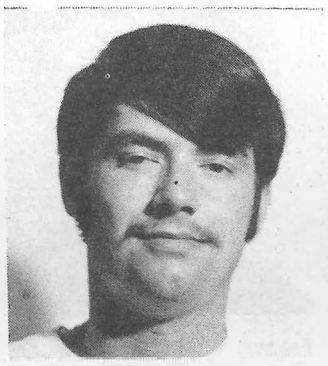
Alan C. Guthke
Senior Technical Aide—
Beam Transfer
619 Tinley
Aurora

Jack H. Haberbush
Contract Administrator—
Contract Administration
110 Hickory
Carpentersville

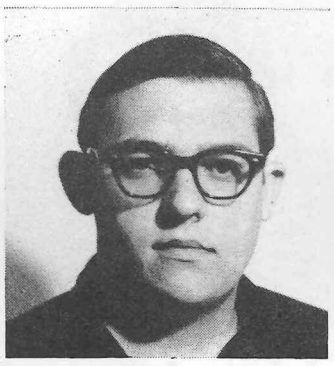


Robert G. Haring
Draftsman—Beam Transfer
1131 Superior
Aurora

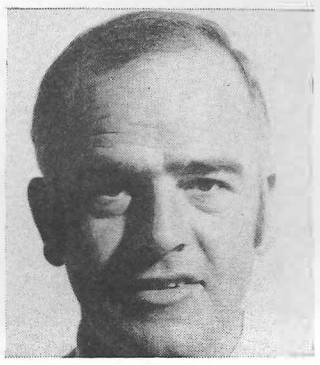
Terry D. Hendricks
Technician—Radio Frequency
672 Villa
Elgin



James T. Hickey
Technician—Linac
310 Lathrop, Apartment 405
Forest Park

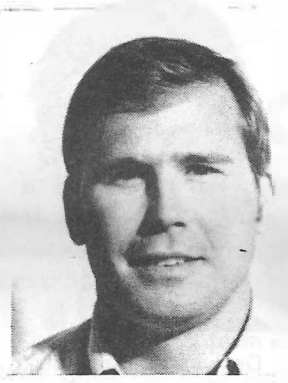


Roger E. Hiller
Machine Shop Assistant—
Technical Services
317 Emery
Joliet



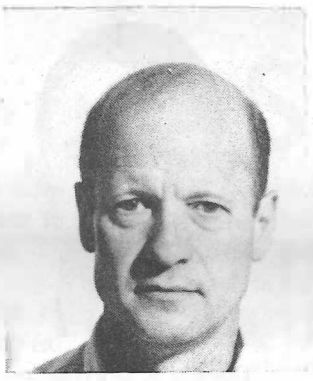
Robert L. Hines
Executive Assistant—
Director's Office
1004 Blackhawk
Park Forest

Joyce Huggins
Telephone Operator
—Village Services

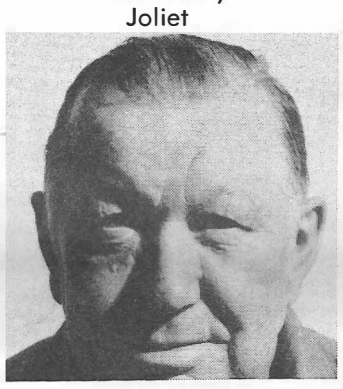


Richard J. Janes
Technical Aide—Booster
439 South Bodini
Hinsdale

Edwin J. Jarman
Technician—Beam Transfer
416 Howell
Aurora

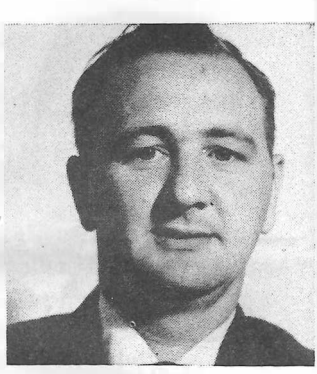


Dwaine C. Johnson
Design Draftsman—Main
Accelerator
740 Cleveland
Batavia

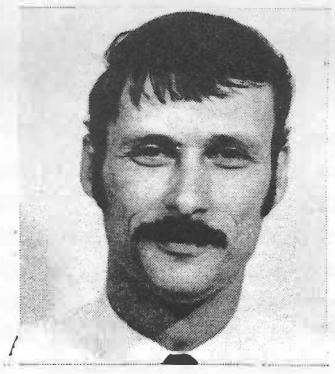


Frank J. Koran
Maintenance Man—Village
Services
2942 West Belmont
Chicago

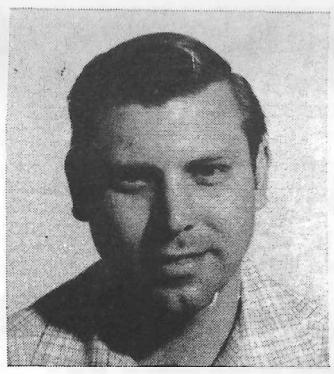
Robert Kratt
Construction Inspector—Village
Services
136 North 16th
Melrose Park



Arlyn H. LaPorte
Purchasing Administrator
Material Services
10 Crestwood
Aurora



Edward J. La Vallie
Design Draftsman—Main
Accelerator
5N340 Petersdorf
Bartlett



Jack E. Layman
Instrument Machinist—
Technical Services
981 Seminole
Elgin

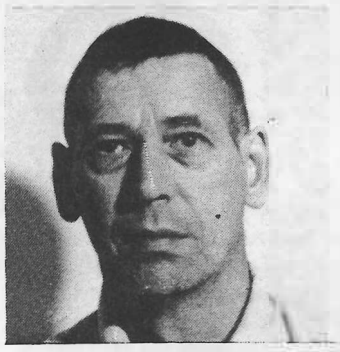
Alan J. Maier
Technician—Main Accelerator
1240 Gladstone
Aurora

Clarrina Joy Martinez
Clerk—Material Services
31 North Sumner
Aurora

Ralph D. Mataya
Groundsman—Village Services
214 Seaburg
Lemont

Rudolf F. Nissen
Engineer—Beam Transfer
106 South Jefferson
Batavia

George J. Nosal, Jr.
Senior Draftsman—Linac
8501 South Kostner
Chicago

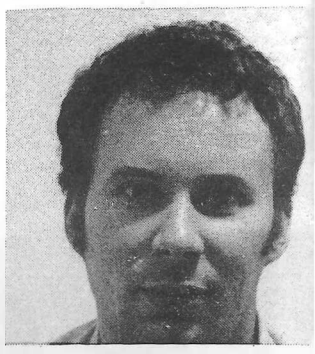


Carl H. Ohrn
Instrument Machinist—
Technical Services
1719 East Roosevelt, Apt. 4
Wheaton

Leslie W. Oleksiuk
Physicist—Beam Transfer
3820 Saratoga
Downers Grove

Eugene C. Olszanowski
Instrument Machinist—
Technical Services
500 North Ashland
La Grange Park

Ronald W. Oram
Engineer—Booster
Four Seasons Motel
Glen Ellyn

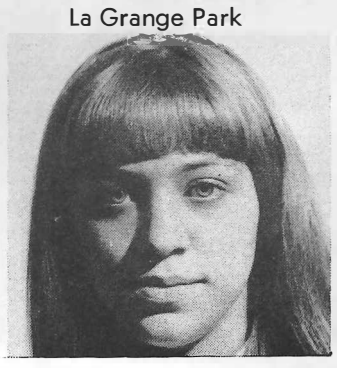


Howard Pfeffer
Engineer—Main Accelerato
5600 Hillcrest, Apartment P
Lisle

Franklin D. Porter
Groundsman—Village Services
1003 2nd
Aurora

Norman L. Porter
Driver—Village Services
608 South Webster
Aurora

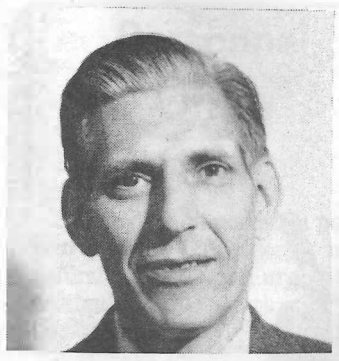
Keith Rich
Programmer—Theory
9542 South Prospect
Chicago



Nancy L. Sabathne
Food Service Attendant—
Personnel
1243 South Oak
West Chicago

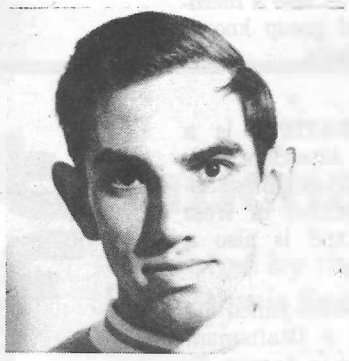
David B. Sanders
Draftsman—Booster
1261 Durham
Aurora

James R. Santord
Physicist—Experimental
Facilities
28 Academy
Bellport, New York



John J. Santori
Technical Specialist—
Experimental Facilities
17W178 87th
Hinsdale

Richard Scherer
Driver—Material Services
2518 St. Charles
Bellwood

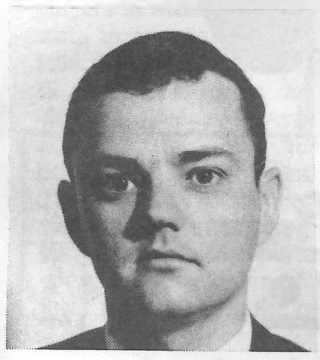


Charles W. Schmidt
Technical Specialist—Main
Accelerator
5518 East Lake, Apartment C
Lisle

Edward H. Scholefield
Designer—Experimental
Facilities
30W214 Argyll, Route 2
Naperville

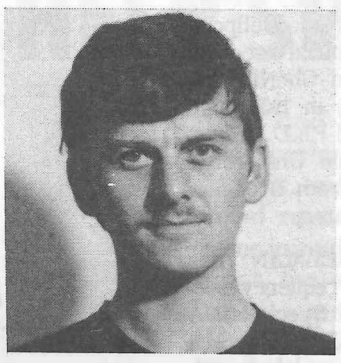
John G. Semmelman
Technical Specialist—
Radio Frequency
1S731 South Ellyn
Glen Ellyn

Billy Shumate
Laboratory Assistant—Theory
5952 South Green
Chicago



Frank J. Sitar
Accountant—Accounting
717 Chase
Joliet

Nick M. Smith
Maintenance Man—Village
Services
215 North River
North Aurora



Daniel Snee
Instrument Machinist—
Technical Services
Shady Hill Trailer Court, Rte. 2
Clinton, Wisconsin

James M. Stephenson, Jr.
Engineer—Booster
144 LeJeune
Lockport

Jack Stiles
Driver—Village Services
802 Mountain
Aurora

Paula A. Stransky
Clerk—Village Services
415 Spring
Naperville

Arthur H. Streccius
Engineer—A-E & Site Planning
202 West South Parkway
Prospect Heights

Herman J. Stredde
Designer—Beam Transfer
1696 Jericho
Aurora

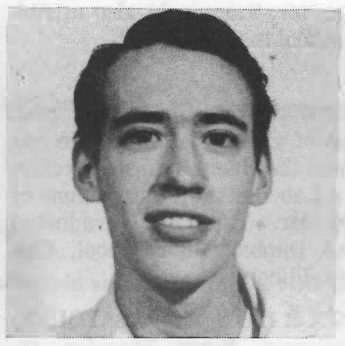
David F. Sutter
Physicist—Main Accelerator
Ithaca, New York

Donald Szarzynski
Instrument Machinist—
Technical Services
5929 West Byron
Chicago

Lawrence E. Tate
Laboratory Assistant—Beam
Transfer
4324 South Evans
Chicago

Carlos M. Velazquez
Draftsman—Beam Transfer
112 Park
Lemont

Joseph S. Volant
Senior Design Draftsman—
Village Services
717 Russet
Streamwood

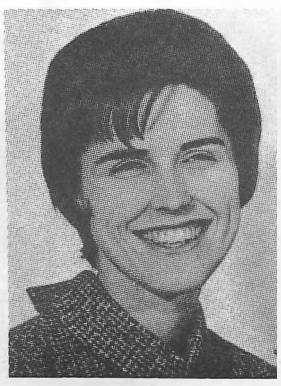


David T. Wilson
Machine Shop Assistant—
Technical Services
1866 Lilac
Aurora

John M. Zuk
Technician—Radio Frequency
504 South Edgewood
Lombard

Members of "The Committee" at NAL

James Buffenmyer
Model Maker—Technical
Services
19 West 124 Rockdale
Lombard



Margaret Kasak
Secretary—Linac
360 West 55th
Clarendon Hills

Robert Krischel
Driver—Material Services
246 Congress
Addison

Leno Mapalo
Senior Design Draftsman—
Booster
5 Martin
Woodridge

Alvin Tanner
Senior Technical Aide—Main
Accelerator
414 South 11th
Maywood

Jan Wildenradt
Senior Technical Aide—Linac
1115 South 11th
St. Charles

New Members— The NAL Family

The following brief biographies of new members of the NAL "Family" cover those who had joined the various scientific, technical and administrative groups during the period May 15 - June 30, 1969. The biographies were written by Mrs. Gloria Moore, Personnel. Photographs of these employees may be seen elsewhere in this edition of the Crier under "New Faces in the NAL Village."

JAMES B. ACHEBE, Engineer, Booster, received his B.S. in 1967 from Montana State University at Bozeman, Montana and his MSME in 1969 from the Illinois Institute of Technology. Mr. Achebe resides in Chicago, Ill.

SUSAN J. ANDERSON of Aurora, Ill. is a new Secretary with the Radio Frequency section. Miss Anderson attended school in Aurora, Ill. and was formerly a secretary with Stephens-Adamson Mfg. Company, Aurora, Ill.

FRANCIS W. ASCOLESE, Engineer, Booster, moved from Wilmington, Mass. to become a new resident of the village of Wheaton, Ill. Mr. Ascolese received his Associate Degree in chemical engineering in 1949 from Lincoln Technical Institute, Boston, Mass. and a B.S. in physics from Boston University in 1961.

* * *

WARREN F. CANNON is the new Assistant to the Equal Opportunity & Community Relations Officer in the Personnel section. A resident of the city of Aurora, Ill., Mr. Cannon is Chairman of the Mayor's Citizens Advisory Committee for Community Improvement and Chairman of the Board of Directors for I.P.T.C.A., a group formed to better community conditions. While in the U.S. Navy he completed Electronic Mates School and has since attended Hampton Institute, Hampton, Virginia and the Leadership Training Institute, Wheaton, Ill.

FRANK L. CESARANO is a resident of Downers Grove, Ill. A new Warehouseman with Material Services, Mr. Cesarano attended school in Downers Grove, Ill., and was formerly with Ace Hardware Company of that village.

LARRY D. CHIPLIS, Machine Shop Assistant, Technical Services, lives in Batavia, Illinois. Mr. Chiplis attended school in Purchas Line, Pa. and completed Air Force G. Ed. in 1964.

* * *

CHARLES W. FOULKE is a new Technician with the Main Accelerator group. He received his A.A.S. degree from DeVry Institute of Technology, Chicago, Illinois in May 1969. Mr. Foulke is a resident of Aurora, Ill.

LAWANA GORDON lives in Streamwood, Illinois and is a new Clerk with the Planning & Scheduling department. Miss Gordon attended school in Elgin, Illinois and was formerly with Hallicrafters, Inc., Rolling Meadows, Ill.

JOHNNY B. GREEN is a new Lab Assistant with Main Accelerator. Mr. Green graduated from Dunbar High School in Chicago, June 1969 and was the Valedictorian of his class. He resides in Naperville, Ill.

MARGARET GREEN is a new Clerk with the Booster section. Mrs. Green attended school in England and is a native of that country. She and her husband, who is a member of the Technical Services group, reside in Yorkville, Ill.

CHARLES P. GROZIS, JR. resides in North Aurora, Illinois. He is a new Draftsman with Radio Frequency and attended Chicago Technical College.

TERRY D. HENDRICKS, Technician, Radio Frequency, attended various fleet schools while in the U. S. Naval Air Force and received his A.A.S. degree in May, 1969 from Milwaukee School of Engineering. Mr. Hendricks lives in the city of Elgin, Ill.

* * *

RICHARD J. JANES resides in Hinsdale, Illinois and is a Technical Aide with the Booster group. Mr. Janes received his A.A.S. from the Milwaukee Institute of Technology in 1963 and has attended the University of Wisconsin, the University of Illinois, Chicago Circle Campus and the College of DuPage.

DAVID J. KINDELBERGER is a new Technician with Linac and resides in Aurora, Ill. He is presently working toward his electrical engineering degree. Mr. Kindelberger has attended DeVry Institute of Tech. and Waubonsee Community College.

FRANK J. KORAN, Maintenance Man, Village Services, attended school in Jackson County, Wisconsin. Mr. Koran was formerly with Mayfair Construction Company, Chicago, Ill.

* * *

JOSEPH T. LACH, Physicist, Experimental Facilities, received his BA in 1963 from the University of Chicago; MS in physics in 1956 from the University of Chicago and his Ph.D. in physics from the University of California at Berkeley in 1963. Dr. Lach presently resides in West Chicago, Ill. and was a former resident of New Haven, Conn. An Assistant Professor of Physics at Yale University in 1966, he was appointed Fellow of Davenport College in September 1967.

ALAN J. MAIER, Technician with the Main Accelerator section, resides in the city of Aurora, Ill. Mr. Maier received his AAS degree from DeVry Institute of Technology, Chicago, Ill. in May, 1969.

* * *

RONALD W. ORAM, Engineer, Booster, comes to NAL from England where he worked at the Rutherford High Energy Laboratory and other laboratories in England. He received the Higher National Certificate in 1951 from Erith Technical College, Erith, Kent, England; the Ordinary National Certificate in 1954 from NW Kent College of Technology, Dartford, Kent, England and is a chartered mechanical engineer and a member of the Institute of Mechanical Engineers C. England M.I. Mech. E. Mr. Oran lives in Glen Ellyn, Illinois.

HOWARD PFEFFER, Engineer, Main Accelerator, is a resident of Four Lakes Village in Lisle, Illinois. He received his AB in 1964 from Columbia University and his MS in physics in 1969 from Cornell University. Mr. Pfeffer was formerly a Technical Associate at the Robert R. Wilson Synchrotron Laboratory, Cornell University.

FRANKLIN D. PORTER of Aurora is a new Groundsman with Village Services. He attended the Cleveland School of Electronics, Cleveland, Ohio. Mr. Porter is a member of the musical group known as the Porter Brothers and may be seen every Sunday night on Channel 60 television.

NORMAN L. PORTER is a new Driver with Village Services and is a resident of Aurora, Ill. Mr. Porter attended school in Coeburn, Virginia. He is also a member of the musical group known as the Porter Brothers.

* * *

NANCY L. SABATHNE is a new Food Service Attendant with the Personnel section. Miss Sabathne attended school in West Chicago, Illinois and is also a resident of that city.

DAVID B. SANDERS joined the Booster group as a Draftsman. Mr. Sanders resides in Aurora, Illinois and attended Waubonsee Community College in that city.

JAMES R. SANFORD, Physicist, Experimental Facilities, lives in Geneva, Ill., having recently moved from Bellport, New York. Dr. Sanford received his BA in 1955 from Oberlin College; MS (Physics) in 1957 from Yale University and Ph.D. (Physics) 1961, from Yale University. He comes to NAL from Brookhaven National Laboratory.

JOHN SEMMELMAN has joined the Radio Frequency section as a Technical Specialist. A resident of Glen Ellyn, Ill., Mr. Semmelman has completed various technical courses at Argonne National Laboratory.

BILLY SHUMATE is a new Lab Assistant in the Theory group. He graduated from Dunbar High School in Chicago in June of 1969 and presently resides in Naperville, Illinois. Mr. Shumate is training to become a Computer Programmer for Theory.

JACK STILES lives in Aurora, Ill. and is a new Driver for the Village Services section. Mr. Stiles has eleven years' experience as a Driver and was formerly with Aurora Cartage. He attended school in Aurora. Ill.

DONALD SZARZYNSKI brings 10 years' tool and die experience with him to his position as Instrument Machinist with Technical Services. A resident of Chicago, Mr. Szarzynski also attended school in that city.

* * *

LAWRENCE TATE is a resident of Chicago, Illinois. He has joined the Beam Transfer section as a Lab Assistant and in June of 1969 Mr. Tate was graduated from Dunbar High School, Chicago, Illinois.

CARLOS M. VALAZQUEZ, Draftsman, Beam Transfer, resides in the town of Lemont, Ill. Mr. Valazquez completed several courses while in the United States Air Force and has since attended Joliet Jr. College, Joliet, Ill.

JOHN M. ZUK, Technician, Radio Frequency, received his AAS from DeVry Technical Institute in Feb., 1961. He received a certificate as WCS Radar Mechanic from WCS school at Lowry AFB in Denver, Colo. in 1964 and has also completed several other technical courses. Mr. Zuk is a resident of Lombard, Illinois.

* * *

Historical Notebook

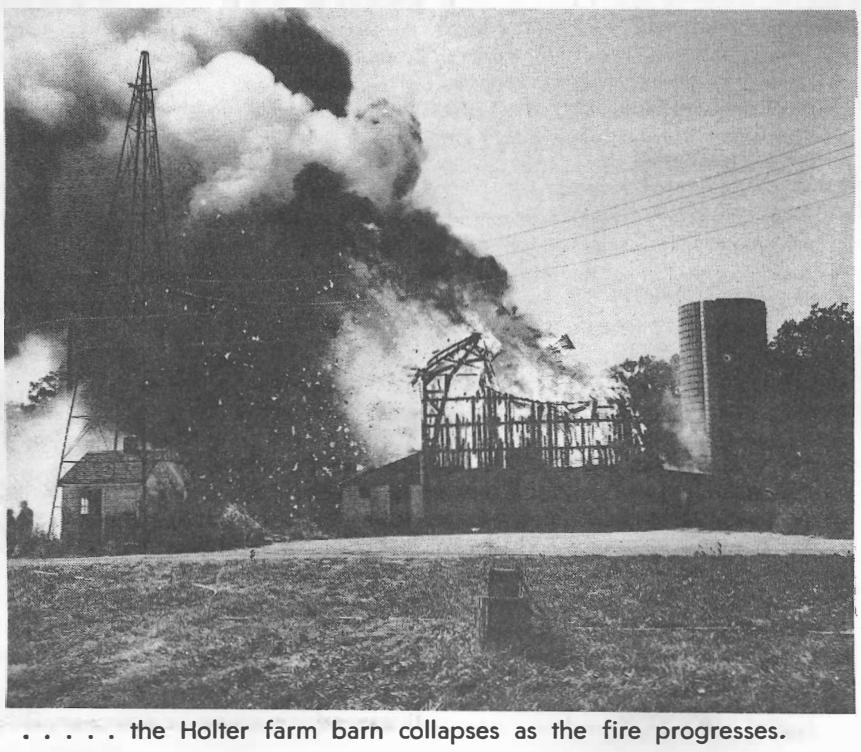
Geneva is the county seat of Kane county. It is seven miles from NAL, 38 miles from Chicago's Loop, 40 miles from O'Hare airport and three miles from DuPage Airport. It is served by the Chicago & Northwestern railway and by a bus which links it with O'Hare field.

Geneva has five elementary schools (one Roman Catholic), a junior high and the Geneva High School. Its Community Hospital recently was enlarged. Shopping facilities are unique, well above average and boast many boutiques and antique shops.

THIS ATOMIC WORLD

David Davis, of Northern Illinois University-Dekalb, will present a traveling lecture-demonstration program "This Atomic World" to high school students in the NAL vicinity. High schools at Batavia, West Chicago, Wheaton, St. Charles and Geneva will be visited by Davis. His demonstration includes a segment on high energy physics. Davis majored in Physics at Oak Ridge Associated Universities in Tennessee.

The first major test of the NAL volunteer fire department took place Wednesday afternoon, September 17, when a practice fire was set on a dilapidated barn on the Holter farm near the NAL construction site. Here, the barn is ablaze as the firemen protect the surrounding property. The Batavia fire department assisted in the one-hour drill. (Photos by Richard Juergens.)



. . . . . the Holter farm barn collapses as the fire progresses.

Personnel Office Notes

Employees interested in participating in the Laboratory's tuition refund program are urged to investigate the course of their choice immediately as many of the schools in the area have already closed registration. See Ralph Wagner in Personnel for enrollment information.

* * *

NAL joined other Illinois employers in withholding for the new state income tax as of August 1, 1969. The rate for individuals is 2 ½ percent of gross annual income. Individuals may claim a $1,000 exemption for each dependent by filling out Form IL-W-4. The form of employees' check stubs is currently being revised by the payroll department. A complete explanation of the new form will appear in the next issue of The Crier.

* * *

A ten percent shift premium went into effect on August 12, 1969 for NAL weekly employees regularly scheduled to work four hours or more between 6:00 p.m. and 8:00 a.m.

* * *

Best wishes go to Barbara Williams, wife of Ken Williams, Personnel, now recovering from surgery.

* * *

Bernie Lensmeyer, NAL's Maitre d', figures that the new male addition to his family, born August 9, cost him $45.00 a pound!

Other new arrivals in NAL families: A girl at the Dick Gorski's; a girl at the Bal Flores'.

* * *

On July 1, the charge to employees for family benefits under the NAL group hospitalization and major medical plan was reduced from $9.75 to $7.00 per month. The saving was achieved by a change in computing the cost from 50% to a flat dollar amount. Additional information and enrollment details from the Personnel Office.

* * *

The U.S. Treasury Department has asked for an increase in the interest rate on Series E and H savings bonds from the current 4.25 %to 5%, retroactive to June 1, 1969. According to the Treasury Department, "The rate increase would be most beneficial to the millions of payroll savers throughout industry who are putting aside their dollars regularly saving for new homes, automobiles, college for youngsters, retirement, second honeymoons or dream vacations."

* * *

Donald K. Poillon, NAL Business Manager, announced on July 1, 1969 that procurements requiring engineering design and fabrication and all contractors services will be the responsibility of the Contract Section. Questions regarding this operation should be directed to Mr. D. J. Latzke.

In addition, all procurements of standard catalogued equipment and commodities including equipment requiring slight modification will be processed through the Purchasing Department. Operational questions of this group should be directed to Mr. R. J. Auskalnis.

These divisions will be made irrespective of the dollar size of the purchase involved.

* * *

IN CASE OF ANY EMERGENCY AT THE NAL SITE: Dial 13.

* * *

NAL'S FTS IDENTIFICATION CODE IS NOW: C1-89-59.

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national accelerator laboratory

Operated by the Universities Research Association, Inc. For the U.S. Atomic Energy Commission.

HELP SPREAD THE WORD!

Interesting and challenging employment opportunities exist at the National Accelerator Laboratory.

The scientific, technical and administrative staffs at NAL are growing at a rapid rate. During the month of August alone, some 40 new employees joined the NAL family.

At present, there are about 50 jobs of various kinds open at NAL. They are in a variety of areas within the Laboratory.

We ask your assistance in helping to fill these vacancies. Please spread the word among your friends and neighbors. Please encourage those you know with the qualifications and experience to apply for the following positions:

10 Electronic Technicians	with Associate Degree or equivalent training needed in the Linac, Beam Transfer, and R. F. groups.
Four Draftsmen	Mechanical; two years experience or more; Beam Transfer, Main Accelerator.
Seven Mechanical Technicians	High School, two or more years of mechanically-related experience. Beam Transfer, Booster, Main Accelerator and R. F.
Five Clerks	High School, general office work, typing; filing, telephone answering. Accounting, Beam Transfer, Material Services, and R. F.
Five Mechanical Engineers	Degreed with one to 10 years of mechanical component design experience. Beam Transfer, Linac, Main Accelerator, and R. F.
Two Electronic Engineers	Degreed with one or more years of electronic circuit or other design experience. Physics Research and Main Accelerator.

Other positions in various groups at NAL for which we are seeking candidates include:

- **Groundsmen**
- **Mailman**
- **Cafeteria Att endant**
- **Warehouseman**
- **Safety Engineer**
- **Machinist**
- **Internal Auditor**
- **Accountant**
- **Designer**
- **Systems Programmer**
- **Scientific Programmer**
- **Personal Representative** to establish in-house training programs at NAL.

Please direct questions concerning these openings to NAL Personnel. We will be pleased to discuss these openings with you or with anyone who might be interested.

Candidates for any of these positions may write the following address for consideration:

Personnel Office,
National Accelerator Laboratory
Post Office Box 500
Batavia, Illinois 60510

national accelerator laboratory

P.O. Box 500 • Batavia, Illinois 60510

an equal opportunity employer

The NAL Summer Study at Aspen-1969

(Continued from Page 1)

that as we formulate our plans for the experimental areas we be fully apprised of the kinds of experiments that visiting scientists will wish to carry out. Only in this way can our designs be appropriately influenced to accommodate the broadest possible scope of physics interests. The summer study programs are one of the principal activities through which this essential set of communications is carried out."

The 1969 Summer Study was divided into a number of sub-groups which studied specific topics of particular interest and importtance. These include:

(1) Design concepts for the transport of beams of secondary particles to research experiments. These include beams of the following kinds: protons, charged pions, separated particles, electrons and photons, muons, neutrinos, neutrons and neutral kaons.

(2) Studies of design parameters and possible experiments that can be done with a large hydrogen-or deuterium-filled bubble chamber.

(3) Studies of possible experiments which may be done in other special detection systems — small bubble chambers, streamer chambers, and wire spark chamber magnetic spectrometers.

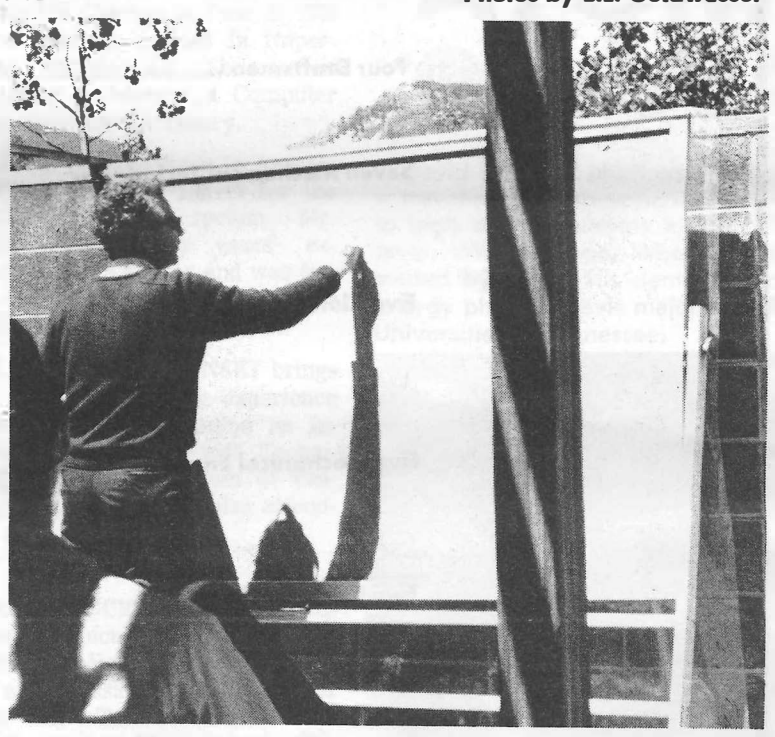
(4) Design concepts for a variety of detectors, such as spectrometers, Cerenkov counters, neutral particle detectors, and many others.

About 150 technical reports on these studies were written. The proceedings of the Summer Study are due to be distributed in December, 1969 shortly before the Annual Meeting of the NAL User's Organization. It is expected that the 1969 User's Meeting will be an important opportunity for the physics community to learn about the Summer Study activities.

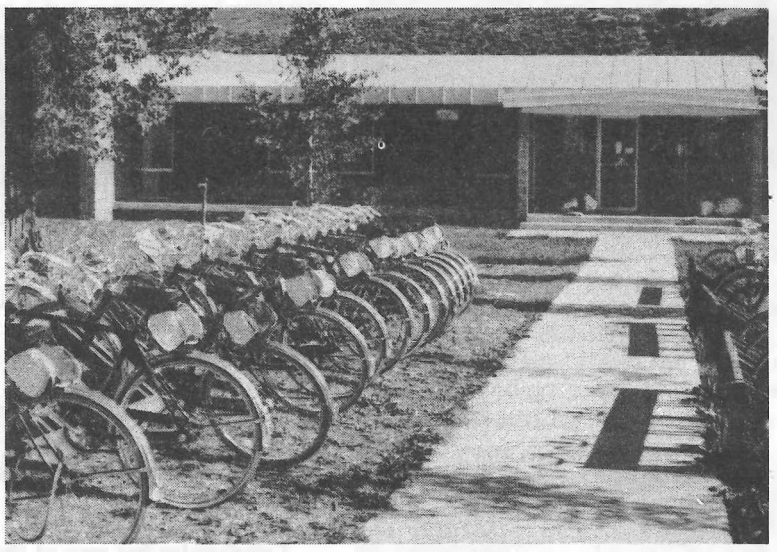
The Experimental Facilities Section at NAL has already begun a careful detailed evaluation of the Summer Study work, under the direction of James Sanford, Section Head, and Lincoln Read, Associate Section Head.

The ideas developed during the Summer Study will likely be of great value in the detailed design work for the experimental area facilities at NAL which is now in progress, and also in the plans for detectors for experiments and of secondary particle beams, which will be designed, built, and put into operation largely by the Experimental Facilities Staff in the next three years.

High energy physicists attend a seminar to consider NAL's experimental facilities during 1969 summer study at Aspen, Colorado.
—Photos by E.L. Goldwasser



Caltech's Murray Gell-Mann lectures at NAL's Aspen summer study. . . .



The NAL transportation corps at Aspen . . .

NAL Scientists Visit Russia; 4 Soviets Tour NAL

Nine physical scientists from NAL attended the seventh International Conference on High-Energy Accelerators at Erevan, Armenia, in the U.S.S.R. from August 27 to September 2.

Those present from NAL were Robert R. Wilson, M. Stanley Livingston, Francis T. Cole, Roy Billinge, Thomas L. Collins, Philip V. Livdahl, Alfred W. Maschke, Frank Shoemaker, and Lee C. Teng.

Among those who presented papers at the meeting were: Robert R. Wilson: "Future Options at NAL;" L.C. Teng, "Colliding Beam Storage Rings for the NAL Synchrotron;" A.W. Maschke, "Extraction and Targeting;" P.V. Livdahl; "The Operation of the First Sections of the 200 GeV Synchrotron;" F.C. Shoemaker, "Main Accelerator Features;" and F.T. Cole, "Plans and Progress at NAL."

After the conference, several of the participants planned to make a six-day tour to observe the Russian laboratory at Novosibirsk, where high-energy accelerators and storage rings are being developed. Others planned to visit the European Organization for Nuclear Research at Geneva, Switzerland.

NAL Is Host to Soviet Visitors

On Saturday, September 13, 1969, NAL was host to four physicists from Russia.

They were I. Eramzhyan, A. Kuznetsov, V. Barashenskov and V. Evseev, research physicists and theoreticians from the proton accelerator at Dubna, Russia.

The Russians were in the United States to attend two scientific conferences—one at the State University of New York at Stony Brook, Long Island, near Brookhaven National Laboratory, and the other at Columbia University, New York City.

In addition to visiting NAL, the Soviets also toured the Argonne National Laboratory.

Edwin L. Goldwasser, NAL's deputy director, directed the tour of the NAL village and the construction site. He was joined by Thomas Collins, Ernest Malamud, Paul Reardon and Donald Young of the NAL staff.

It was the second Russian visit to the NAL site in recent months. In March, six physicists and engineers from the Soviet Union toured NAL and lunched with Robert R. Wilson, NAL's director.

Classified Ads

This classified section may be used only by active employees of NAL, DUSAF, & AEC. Ad copy should be restricted to 20 words or less and typewritten. All items for sale or rent must be the property of the person submitting the ad. It must be understood that houses, apartments, or rooms for sale or rent must be available without regard to race, creed, color, or national origin. No ads will be accepted for resale in connection with a commercial enterprise. The Crier reserves the right to review all ads submitted for publication. Copy should be sent to Gloria Moore, Personnel, 14 Sauk Boulevard.

For Sale

Portable Crib $10; Play Pen $10; Blonde Muskrat Fur Cape $12; SPEEDI-CRAFT RUNABOUT BOAT, 14' 35 HP Evinrude Electric Start Motor, Gator Trailer, skis, extras $450.00. Frank Mehring, Ext. 242 or Home: 424-3429.

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Qualified Spanish Tutor. Enroll for fall now. Phone Mr. Santiago, 964-7497 (12-Hour Ans. serv.)

Moving Sale

October 4 and 5, Clarendon Hills. Ladies' clothes and maternity; baby equipment; boys' clothes to size 3; small appliances, dishes and cookware; linens and drapes; records and books and much miscellaneous. For further information call Margaret, Ext. 242.

For Sale

OLDSMOBILE '62 Good Condition, Power Steering, Power Brakes, New Snow Tires. $450.00. For further information Call Mrs. Santiage on Ext. 225 or 324, Evenings try Telephone 964-7497.

Bridge Club Meets At NAL Cafeteria

For the sitdown-type "sports", DUSAF and NAL have joined forces in a **DUPLICATE BRIDGE CLUB** that meets every three weeks on Thursday evenings in the Cafeteria at 7:30 p.m. The next meeting will be held on September 18th — Call DUSAF representatives Marv Warner or Bill Johncox on 879-2900 or NAL representatives Bernie Lensmeyer, Ext 295 or Spike Severance, Ext. 351, so plans can be made for the right number of tables and boards. All interested bridge players are encouraged to participate, whether or not you have ever played duplicate-style!

Two meetings are scheduled for October — the 9th and the 30th. Please mark these dates on your calendar and plan to join in the "shuffle"!

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