The Village Crier

national accelerator laboratory

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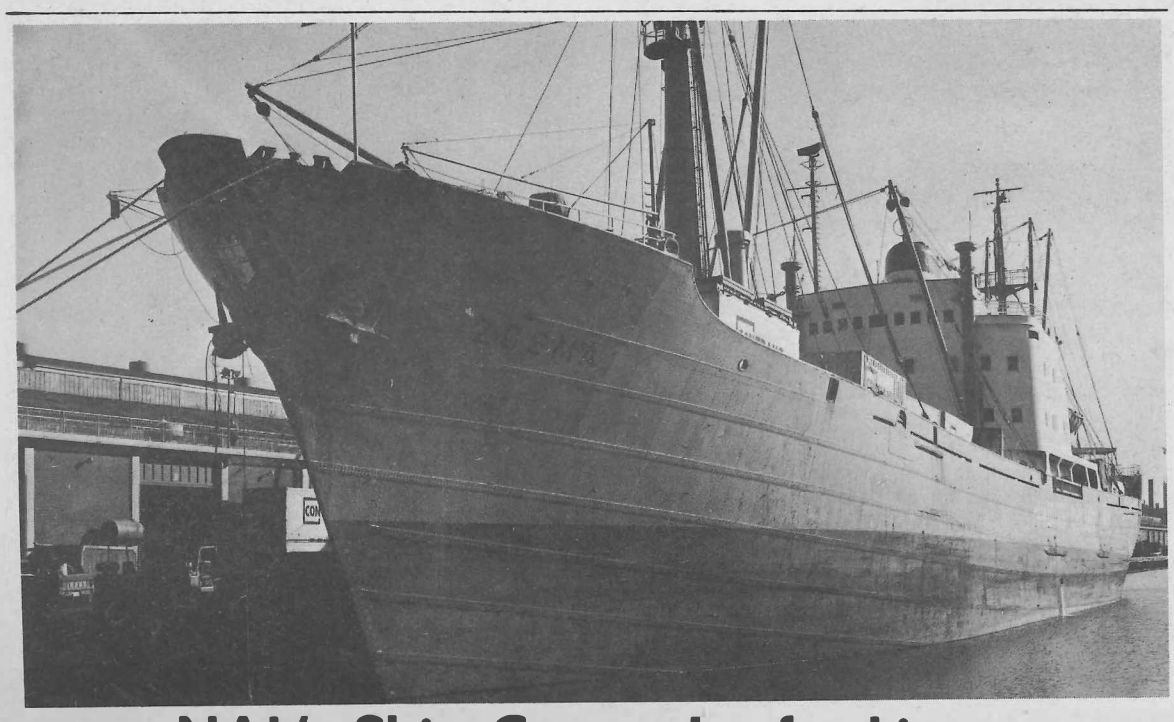


NAL's Ship Comes In—for Linac

Several weeks before the Fall shipping season on the Great Lakes ended, a ship with cargo for NAL arrived in Chicago. Here, at Navy Pier, stands the Hamburg-Chicago Line freighter Zosma with major components of the Cockcroft-Walton—the pre-accelerator which will be part of the NAL 200 MeV system. The Cockcroft-Walton, manufactured in Switzerland, was shipped in a large container which occupied space on the ship amidst German wines and beers.

Glenn Lee, Linac engineer, reports that his section is awaiting word froom the contractor developing the Linear Accelerator enclosure that he is ready to put it in place. At present, the Cockcroft-Walton stands on a truck near the Linac laboratory buildings. Lee expects that the pre-accelerator will be assembled under NAL supervison sometime during December, 1969. It will be attached to the high voltage generator in the Linac building enclosure.

If all goes well, the pre-accelerator should produce a proton beam sometime in Janurary, 1970. It is possible a million volts could be generated by this huge machine which sports blue-enameled supporting columns and highly-polished aluminum high-voltage domes and corona rings.

For posterity's sake, motion pictures were taken of the ship's arrival in Chicago. It has been on the seas and in various ports for more than a month before reaching the city.

Weston Villagers In Final Meeting

The trustees of the village of Westoon held their final board meeting in the NAL village Wednesday night, November 26.

The meeting represented one of the final steps in the foraml dissolution of the village which has since become the NAL Village, headquarters of the Natianl Accelerator Laboratory. Weston is part of the 6,800-acre site on which NAL is constructing the 200 billion electron volt proton synchrontron — the world's largest.

To make it legal, the five-man board first met in the former Village Hall of Weston. This building has since been taken over by Experimental Facilities.

In final business directed by Arthur Theriault, Weston Village president, the board voted to approve an ordinance to vacate the streets in the Village. This was a part of the legal necessity to properly turn over the entire site to the U.S. Atomic Energy Commission by the state of Illinois, which had purchased the entire acerage.

The board, representing the 450 persons who formerly lived in the village, also approved paying $4-270 in various bills. Money the village had in the general fund and from the motor fuel and utility tax revenues was divided equally between West Chicago elementary school district 93 and West Chicago High School district 94. Each district received a check for $1,-775 at the meeting.

Theriault, who now resides in West Chicago, was named trustee of the village account to handle final village matters.

Just before the meeting was adjourned, State Rep. Lewis V. Morgan, Jr., (Republican, Wheaton), hailed the turning over of the Weston site to the NAL as "the scientific gift of the century." Mayor John Downs, of West Chicago, called the event a "solemn occasion dedicated to progress."

The Laboratory was host for a small reception at the end of the meeting. Former residents of the village sat around and reminisced. Francis T. Cole, assistant director of NAL for technical affairs, represented the Laboratory at the board meeting.

Cole presented each of the trustees with a letter to them from Robert R. Wilson, NAL director. It read:

"This evening will be the last meeting of the Village Board of Weston. I want to take this occasion to thank you, as a member of the Board, for your help to us during the difficult period when the Village was being transformed into the National Accelerator Laboratory.

"It was hard for the people of Weston to give up their homes for the Laboratory site, and hard for those who were still in residence with their families during the period in 1968 when we were occupying some houses, moving others and putting up new buildings which we had to do if we were to keep our schedule. The Laboratory will always be indebted to you for the positive attitude with which you approached our mutual problems."

Vote $70,000,000 For NAL in '70

Congress completed action Thursday, December 4, on a bill that included $70,000,000 in construction and development funds for Fiscal 1970 for the National Accelerator Laboratory.

The appropriations bill was sent to President Nixon for his signature. It covers the period from July 1, 1969, to June 30, 1970.

Orginally, President Nixon had asked Congress for $96,000,000 for Fiscal 1970 for NAL. The House reduced this to $64,000,000, but the Senate restored $25,000,-000, bringing the proposed appropriation to $89,000.000.

However, House and Senate conferees trying to reconcile the figures settled on the $70,000,000 total for NAL as a part of the U.S. Atomic Energy Commission's allocation for the current fiscal year.

Before the bill was passed, NAL was receiving funds from the AEC under a "continuing resolution" provision. Since July 1, 1969, NAL has received a total of nearly $40,000,00 to maintain its construction and development schedule.

The Laboratory has not yet had time to determine exactly what things that should have been started this year must be put off to next year in order to accommodate to the 70 million dollars. In any case, Dr. Robert R. Wilson, NAL Director, insists that the June 30, 1972, turn-on date will still be met. It will necessarily be done in a less efficient manner, and the facilities available at the Laboratory at the time there is a proton beam will be far less adequate than had been a larger appropriation this year.

Theoretical Physics Section is Formed

A Theoretical Physics Section, temporarily housed at 27 Sauk, was formed this fall at the National Accelerator Laboratory, with Dr. David Gordon as its acting head.

The group was created in response to the desire to have at an early stage of the Laboratory's development a tehoretical component as an integral part of its activities.

Staff members of the group are Louis Clavelli, David Gordon, Pierre Ramond, Jim Swank and Don Weingarten. They are purticle physics, with special emphasis on high-enrgy phenomena.

In addition, the group expects to become involved in theoretical problems related to future experiments to be done by NAL experimentalists both at other facilities and by NAL.

One of the early activities of the group was to assist Roger Thompson, the NAL libarian, in greatly expanding the elementary particle physics section of the library.

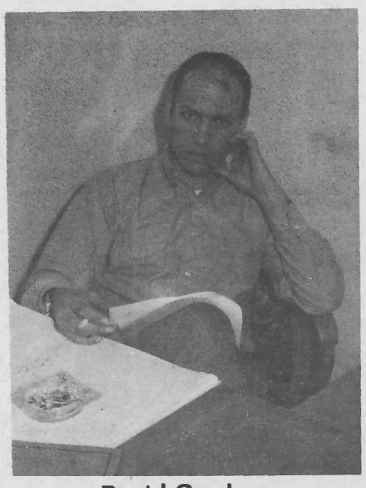
A series of weekly theoretical seminars has been organized, gringing distinguished theorists to the Laboratory on a weekly basis.

In the near future, a series of sets of weekly lectures on topical areas of thoretical physics will be initiated. This program under the direction of Dr. Edwin L. Goldwasser, NAL Deputy Director, will bring a guest lecturer to the Laboratory one day a week for a period from two to six weeks.

He will develop discussions of some area of high energy physics which is of current interest to him.

The format of sets of con- "Professor of the Month" to desecutive seminars will enable the velop shitopic starting from basis principles and finishing with a discussion of current work and future interest.

In a statement issued to NAL staff members November 6, 1969,



David Gordon

Dr. Goldwasser said, in part:

"During the past two years we have tried to keep good contract between theoretical physicists and experimentalists who are building the 200 BeV accelerator and planning its experimental facilities." . . . "We have now added to our staff five young post-Ph.D. theorists who, as members of our staff, are available to our experimentalists in connection with their current experienmts and with their formulation of plans for facilities to be provided for the 200 BeV research program.

"This year, as another facet of this program, we are planning to bring to NAL as visiting lecturers some of the theorists who are working with problems connected with physics at higher energies. Each such theorist will be asked to take responsibility for a series of two to six weekly seminars in which he will discuss a problem that is of particular interest to him and of some omport to the 200 BeV research program.

"We are starting this program of visiting "Professors of the Month' 'in December. Professor J. J. Sakurai will give a series of three seminars on December 1, 8, and 15, on the subject 'Vector Mesons and Electromagnetic Interactions of Hadrons.' " We welcome visiting theorists and experimentalists who would be interested in participating in these discussions.

'Free Speech' Bulletin Boards

The editors of the Village Crier and the Director's Office have recently received several communications from members of the staff concerning the appropriateness of such activities as the recent moratorium being carried on within the Iaboratory. After reviewing the role of the Village Crier and the need for some vehicle for free expression at NAL, the Director, Robert R. Wilson, issued the following statement:

"We live in a turbulent time of torment and change. Active and concerned people with inquiring minds - and I hope such people have been attracted to this project - are going to give expression to their concern. That this has actually happened here at the Laboratory has been a source of gratification for me.

"I can sympathize, though, with those who are bothered by any kind of poltiical expression in the Laboratory and feel it is out of place. It is also legitimate to be concerned about the use of Laboratory facilities for that sort of thing.

"I am not sure it would be wise even to try to formulate policy for such matters. Moderation, tolerance and mutual responsibility can be expected to govern the kind of people we have at this Laboratory. I have been pleased in fact our facilities have not been misused.

"As an expeiment we will try "Free Speech" bulletin boards. One will be located in the cafeteria and another in the Curia. All announcements and notices on the bulletin boards must be signed by an employee of the Laboratory, and they will all be removed every Friday afternoon at five o'clock."

* * *

The Village Crier's basic mission is to report on activities directly related to the development of the National Accelerator Laboratory. At this point in time, the editors do not believe that they can provide space for continuing debates on matters of general interest that normally are covered by other media. We are, therefore, not printing general subject Letters to the Editor or unsolicited articles and columns.

Collins: NAL's Plan For Use of Water

A meeting to clarify the National Accelerator Laboratory's proposed use of water was held at the NAL Village September 17.

John Guillou, director of the Illinois Division of Waterways; Clarence Klassen, director of the Illinois Sanitary Water Board and Raymond C. Dickerson, director of the Illinois Department of Business and Economic Development, were among those present at the meeting in the Curia.

The NAL presentation was made by Thomas L. Collins, associate director, accelerator division, NAL. Following is the text of a position paper prepared by Dr. Collins on water management at NAL:

Volumes and Flows

Throughout this presentation, I will use "millions of gallons — mg." as the unit of water volume and "millions of gallons per day — mgd." as the unit of rate of flow. I find the following list useful in visualizing these units:

1. **A cube 51 feet on a side contain 1 mg.**
2. **A town of 10,000 people uses about 1 mgd. (average)**
3. **A typical low (summer) flow in the Fox is 50 mgd.**
4. **A typical flood (spring) flow in the Fox is 2000 mgd.**
5. **A good deep well can flow about 1 mgd.**

The Cooling Requirement

Almost all of the electric power used at the NAL must be dissipated by water cooling; furthermore, the maximum temperature of the water should be a cool 100 degrees F. The planned power installation is 135 million watts (MW) peak. With some additional transformer cooling, this can be increased in the future to 200 MW peak.

If we assumed 200 MW average, we have a reasonable maximum design level for many years. (We foresee that the technological development of low power cryogenic magnet systems would allow extensive future developments without increasing the power and cooling installations.)

Again, consider a short list:

200 MW is the power used by a medium-sized city (varies with industrial use)

200 MW will heat water from 70 degrees F. to 90 degrees F. at the rate of 100 mgd.

200 MW will evaporate water at the rate of 2 mgd.

Now 100 million gallons per day is a huge flow — it exceeds the average use from the public systems of DuPage and Kane Counties combined! Furthermore, the introduction of such a flow of warm water into any local river or stream would be a disaster. Fortunately, we can cool the water by evaporation of a portion of the flow (in a cooling tower) and we can then reuse the bulk of it. In this case, we must supply 2.0 mgd. to "make-up" the evaporated water. Actually, about 2.2 mgd. are needed because of losses.

In addition, we must withdraw about ½ mgd. from the cooling water circuit so that the salt content of cooling water is stabilized at about four times the salt content of the raw water. This ½ mgd. of "blow-down" presents some problems in disposal which I will discuss later. The important point is that cooling is best provided by taking only about 2.2 mgd. from some source and evaporating it.

Sources of Water

There are three possible sources for make-up water for the NAL cooling systems. The deep-well aquifers, the shallow-well plus surface-water system, and the Fox River.

The deep-well aquifer (approximately 1200 ft. down) is presently overdrawn. The make-up requirement of 2.2 mgd. is about 10% of the estimated recharge rate for this aquifer. An additional pumping of this amount, particularly on the edge of Aurora "cone" (lowered level caused by heavy pumping) would certainly affect surrounding community water systems. Furthermore, this water is of drinking quality. It is best to avoid using deep wells.

Surface water and shallow wells (into gravel beds and 200 feet into the dolomite sandstone) form a local system that can be "managed" to produce considerable water. Unfortunately, the site does not contain extensive gravel beds and we are at the western edge of the good dolomite aquifer, so we can do little towards managing this water system. WDe will use it to supply our domestic requirements (¼ mgd.) and we will capture excess surface flow in our drainage system and store it in our industrial water reservoir. Again, this is drinking quality water and we must be careful not to disturb the efforts of neighboring communities to develop and manage this important water resource.

The Fox River is the closest source of industrial quality water (reused water). It has a highly variable flow, but on the average it is a much greater water resource than the well systems. To allow recreational use and at the same time to transport effluent from present and future sewage treatment plants, the minimum flow should be 130 mgd. At present, the minimum flo wis normally about 50 mgd. and is below the desirable level for three or perhaps four months of the year.

On the other hand, the average flow is 475 mgd. and the peaks are much higher. The river is an excellent alternate source to the overburdened well systems for industrial users who are willing to construct reservoirs to supply water during the four-month low flow period.

We propose just this. We will construct a reservoir so that we will not need to take water from the Fox River whenever the flow drops below the recommended minimum.

In this way, we will not interfere with any future authority that is attempting to improve the low flow conditions in the Fox River to proper recreational and transport standards.

At the same time, we will not compete with communities for the limited supply of drinking water. Note that the pumping rate from the Fox River would be less than 2% of the recommended minimum river flow and less than ½% of the average flow.

The Pollution Problem

Most of the water we use is evaporated (some blows off or leaks away). The salt in the water is not evaporated and is concentrated in blow-down water. We propose to treat this water, removing the salt in de-ionizing beds, and to reuse it as raw water.

We could return it to the river (and increase our initial pumping by the same amount) but the net effect would be to increase the salt concentration slightly of the river.

We believe that although water must evaporate and therefore be permanently removed from the river, the use should not degrade the remaining river water in any way — by heating it or by increasing the level of pollutants.

Water Management

It is our opinion that this plan is consistent with future water management in the Fox River area. Indeed, the same conditions might be offered to other industrial water users, namely:

a) **No pumping which would result in river flow of less than 130 mgd.**

b) **Four-month storage reservoirs for low flow periods.**

c) **No increase in river temperature or pollutant levels.**

This interim policy would extend the period of adequate supply from present domestic water systems without seriously compromising action by a future Water Resource Management Authority.

Dr. Thomas L. Collins, associate director, accelerator division, NAL, explains Laboratory's conservationist position on the use of water resources in its area.

Increase NAL Site Patrol After Theft

Increased patrols by the NAL guard unit have been made since the report of a burglary of $4,275 in office equipment October 29, 1969, on the NAL site.

The burglary occurred during the night and was discovered at 7:30 a.m. October 30.

The equipment taken included five calculators, an electric typewriter and two small adding machines. The machines were in a former church building at East Wilson Street and Warrenville. The building was being used by DUSAF, architects and engineers working on the laboratory site.

Kane County deputies said burglars entered the building by prying open a south side basement door.

"The Gazebo," the NAL Survey Tower, was developed by DUSAF and stands in the precise center of the Main Ring. It is elevated about 25 feet and the upper section rotates about 15 degrees so that sectors of the main component of the NAL accelerator system can be seen as the Main Ring is under construction. (Photo by Tony Frelo, NAL.)

DUSAF: Necessity Brings Invention

Its official name is Survey Tower, but it has affectionately become to everyone in DUSAF, as well as NAL, "the Gazebo," from the dictionary definition, "a structure commanding an extensive prospect."

Precise Survey Required

Stemming from the request from NAL that the extremely precise surveying work must be performed in a protected environment, the Gazebo's shape was dictated by the functional use of the principal surveying monument which it surrounds. This monument and the encompassing Gazebo are located precisely at the center of the Main Ring and elevated about 25 feet, in order to see all sectors of the Main Ring from this point.

Rotates 15 Degrees

The upper section of the Survey Tower is required to rotate about 15 degrees. In spite of the fact that the windows of the upper portion are full height, there will be times that the line of sight would be blocked by a window mullion, thus necessitating the rotation of the upper portion. This upper portion, designed to ride on nylon casters, is completely independent and can be rotated by two or three men.

For ease of rotation the roof has been designed as a "folded plate" utilizing a "stressed skin" structure similar to an airplane frame. The result is a most pleasing edifice enhanced by the brilliant colors selected for its finish.

NAL Village Crier

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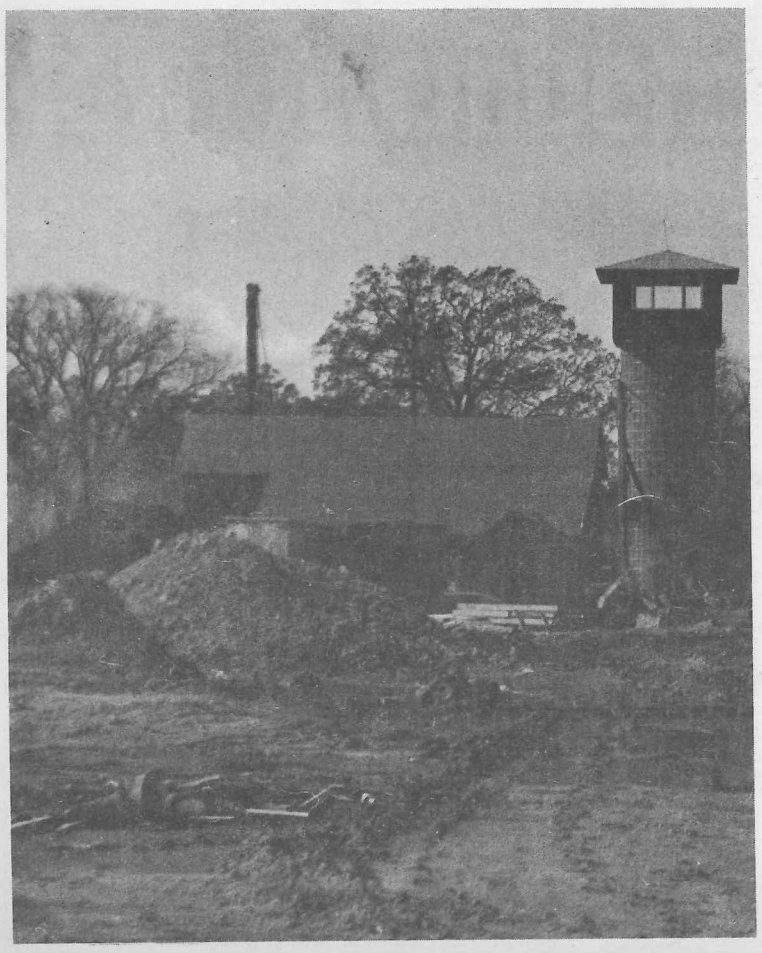


A silo on the former Schimmelpfennig farm has become the NAL "observation tower" during the construction phase of accelerator system. The tower stands on the southern perimeter of the Booster ring. The DUSAF construction office is located nearby.

Weisskopf Panel Report Sees Increases In High-Energy Physics Aid in Next Decade

The following article is reprinted from the October, 1969, issue of Physics Today with the permission of the editors. It concerns the report of a committee headed by Victor F. Weiskopf, Institute Professor of Physics and Chairman of the Department of Physics, Massachusetts Institute of Technology, Cambridge, Mass. Prof. Weiskopf formerly was director of The European Organization for Nuclear Research, Geneva, Switzerland.

High-energy physics support ought to increase by an average of about 8% per year over the next decade, but in the first few years a larger increase will be needed to construct the 200-GeV Batavia accelerator, according to the High-Energy Physics Advisory Panel of the Atomic Energy Commission. In a recently issued 164-page report the panel, chaired by Victor F. Weisskopf, also recommended that a storage ring be built at the 20-GeV Stanford Linear Accelerator Center (SLAC) at the earliest possible date and that the next big accelerator make protons with 2000 GeV or more. By 1980 high-energy physics would be costing $480 million per year.

Weisskopf said that such an average increase would be in line with the increased support that can be expected in the future for basic science in general, so the panel is not asking any special consideration for high-energy physics. It would continue to receive between 5 and 6% of the support of all basic science from federal, state and industrial sources.

Current research.

The recent budget tightening for physics research has kept high-energy support roughly constant in dollars over the last three years; this meant steadily decreasing support in actual value, the report noted. The decline occurred at a time when major new facilities were starting; SLAC for example, has not had enough money either to operate the machine full time or to run counter experiments simultaneously. The report urges that the budgets of existing high-energy laboratories and university research groups be increased by 10-15% per year for a few years to avoid further deterioration of research capability.

Equipment funds have been cut severely in the last few years, apparently to limit expansion of existing facilities; the panel urges that the equipment budget be restored to meet current needs of existing programs, provide for needs associated with new facilities and allow for development of new devices.

Immediate future.

Completing the Batavia accelerator should have the highest priority for the near future, the panel says. Future budgets should allow for an energy increase to 400 GeV or more, once the machine has operated successfully at 200 GeV and some experience with research at this energy has been acquired.

Although the first successful colliding-beam experiments with electrons took place in the US, most of the present work is going on in Western Europe and Novosibirsk, USSR. The panel urged continued support of the storage-ring by-pass at the Cambridge Electron Accelerator and construction of an electron-positron device at SLAC.

Two huge bubble chambers are considered for the Batavia National Accelerator Laboratory (NAL). The 12-foot (3.7-meter) hydrogen chamber nearly finished at Argonne should be considered for removal to Batavia two years from now (if present schedules continue to be maintained). For neutrino physics, a larger chamber with higher magnetic field is essential, the panel says. It urges early construction of the 25-foot (7.7 meter) hydrogen chamber, which has been jointly proposed by Brookhaven and NAL; it would provide four times the neutrino interaction rate of the 12-foot chamber.

Support for cosmic-ray particle physics should be doubled; the sums are relatively small and offer a unique opportunity to do experiments at ultrahigh energies. The panel does not think a large national cosmic-ray laboratory is needed right now.

The panel urges that negotiation continue toward participation of US physicists in work at the 76-GeV Serpukhov accelerator in the USSR.

Future projections.

Because the NAL accelerator can reach 400 GeV, the next step beyond should be 2000 GeV, the report says, and the machine should accelerate protons.

New technologies applicable to accelerator design are exceedingly promising, but none is far enough along that definitive designs can be made, according to the report. There are several promising approaches:

In the electron ring accelerator concept a ring is compressed, protons are trapped and then the ring can be accelerated. Experiments in the coming year will test ring stability and feasibility of magnetic expansion. Potentially the accelerator could produce high-energy protons in a structure of moderate length.

A superconducting alternating gradient synchrotron could have a stronger magnetic field with less power consumption and ring size than conventional machines. So far superconducting magnets with time-varying fields have shown excessive power losses; but recent work with highly stranded, twisted conductors suggests this problem may be solved soon.

Because the resistance of some very pure metals drops by several factors of ten at low temperatures, one could make high-field pulsed magnets for accelerators out of aluminum, say. Cryogenic refrigeration costs might be lower than that required for superconducting magnets.

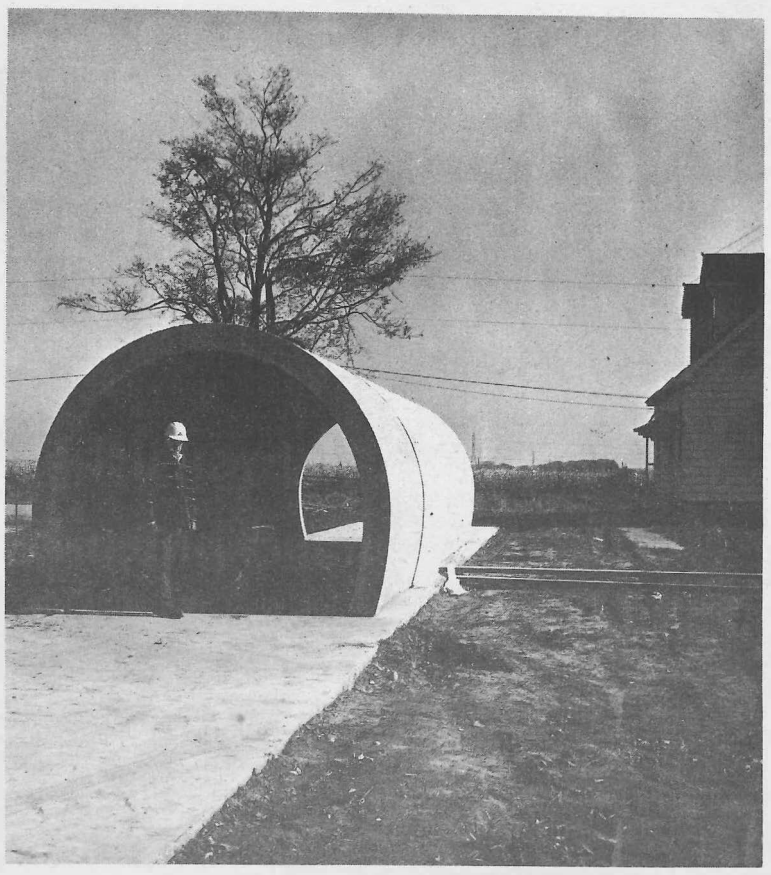
Superconducting electron linear accelerators could provide higher energy per length than conventional linacs and offer a nearly continuous beam rather than the short duty cycle required by the high dissipation of power in conventional linac cells.

Several varieties of accelerators with superconducting dc magnetic fields have been proposed.

These new techniques are applicable not only to accelerators but also to detection equipment and beam transport. The report urges both intellectual and financial support for such research and development.

The panel believes that results from Serpukhov and Batavia will show many interesting phenomena between 30 and 200 GeV; it anticipates the need for revitalizing existing laboratories by increasing the energy of proton and electron accelerators into this range. As possibilities the report suggests that the SLAC accelerating structure could be replaced with superconducting microwave cavities and the Brookhaven AGS could have its energy boosted by using superconducting or cryogenic magnets.

Proton-proton storage rings should be added to the Batavia accelerator after some experimental experience with the CERN 25-GeV storage rings, according to the report. At present 100-GeV intersecting rings appear feasible for NAL, the panel notes.



Vernon Kenney, AEC engineer, stands in front of one of the Main Ring pre-cast tunnel sections that are being fabricated at a former farm on Eola Road on the NAL site. (Photo by Tony Frelo, NAL).

Suggestion Boxes At 10 Places

Ten green and red wooden boxes for employees to submit suggestion on how to improve their work situations and internal communications have been placed throughout the NAL Village.

The boxes are cleared every Monday morning and the suggestions are brought to the Director's office. There, Dr. Robert R. Wilson, NAL director, and Donald R. Getz, assistant director, read over and seriously consider every suggestion that is made.

The suggestion boxes are placed in the following locations: The Cafeteria, the Director's Complex, Linac, Machine Shop, Air Building, Radio-Frequency, Booster, Main Ring, Beam Transfer, and Experimental Facilities.

Suggestions may be signed or unsigned.

Group Insurance Rates Revised

Charles F. Marofske, personnel manager, issued the following statement on November 11, 1969, about a change in group life insurance rates for NAL employees:

"Effective November 1, 1969, the monthly employee cost for Supplemental Two Life Insurance coverage has been reduced from 50¢ per Thousand to 35¢ per Thousand.

"This reduction in cost will be reflected immediately in payroll deductions for all employees who have selected Supplemental Two Life Insurance. The reduced rate reflects a lower overall premium rate granted the Laboratory by Connecticut General due to the expansion of our basic group and our excellent experience."

New Offices for EEO

The NAL Equal Employment Opportunity staff has moved to new and improved quarters at 26 Sauk boulevard in the NAL Village. Occupying offices there now are Kennard Williams, head of EEO; Warren Cannon, Roy Rodriguez and Michael Hardy. Their telephone Extension is 415.

Name Dorner New Member Plan Commission

Rudolph Dorner, 427 South 12th Street, St. Charles, has been appointed to the St. Charles Plan Commission by Mayor C. V. Amenoff. The city council confirmed the mayor's appointment.

Dorner is site manager with the National Accelerator Laboratory at Weston. He is a graduate of the University of Illinois with a degree in forestry and was former chief of planning and development with the Illinois Department of Conservation. He also has experience in park management and conservation.

The new plan commission member and his wife have a son, Steven, seven year old.

NALites Plan Hockey Night

Another occasion in the Fall 1969, NAL recreation schedule was set for Sunday night, December 7, 1969.

For $10 per person, the evening included an individual pizza, beer and attendance at the Chicago stadium hockey game featuring the Chicago Blackhawks and the Detroit Red Wings.

The bus left from and returned to Shakey's Pizza Parlor, 110 Lake street, Aurora. The pizza was served between 5 and 6 p.m. and the bus left for the stadium at 6 p.m. and returned at approximately 11 p.m.

No Hunting On NAL Site

Hunting has been prohibited to all on the NAL site.

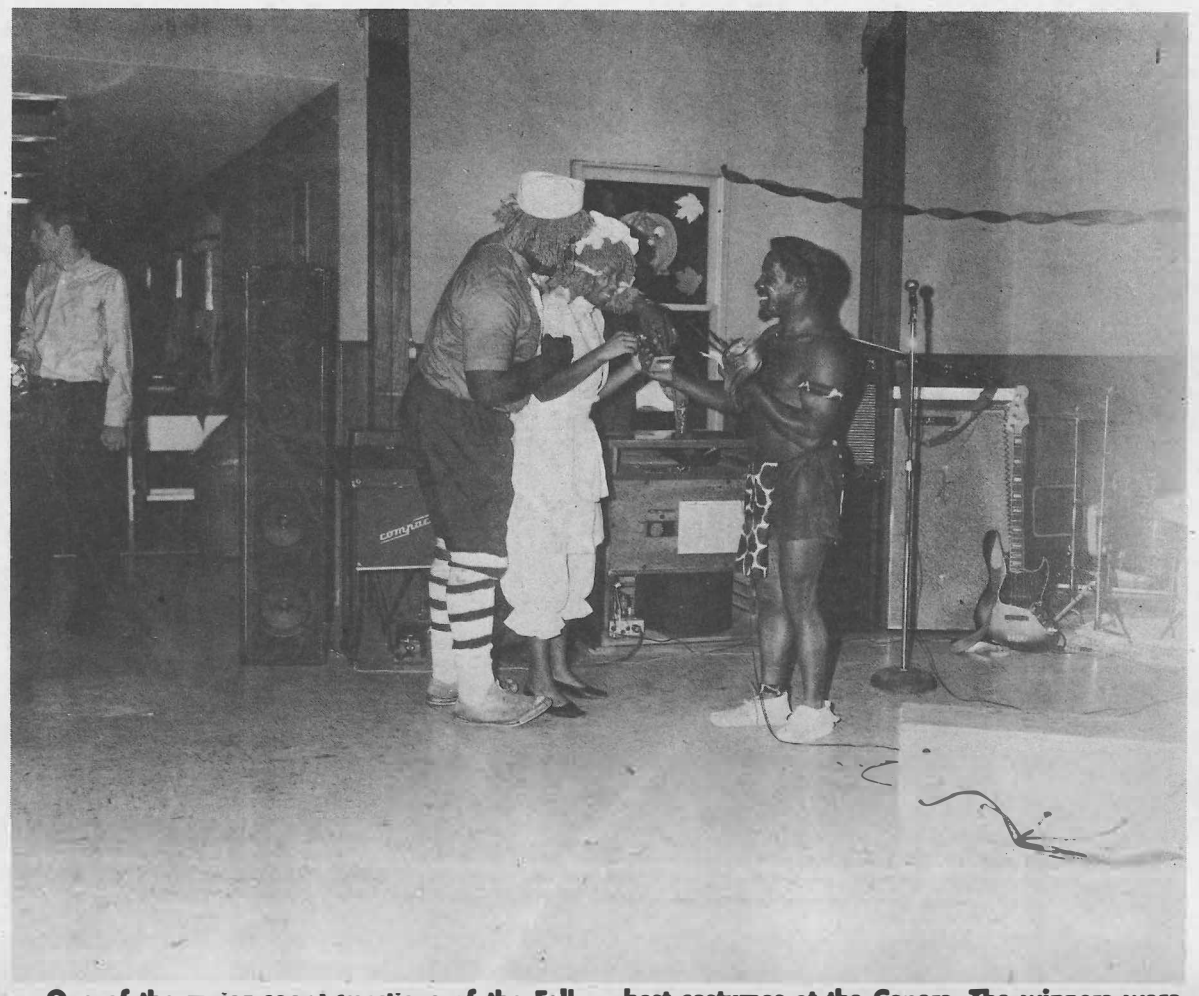
A statement issued November 18 by Dr. Robert R. Wilson, NAL director, said:

"We have decided on a policy of no hunting on the site. Accordingly as of November 7, 1969, all boundaries of the NAL site have been posted with "No Hunting" signs.

"Included in this policy is a prohibition on the carrying of weapons.

"The policy applies to all NAL, AEC, and DUSAF employees, contractors, and subcontractors and their employees, as well as to the general public."

NALite Disguises Win At Halloween Capers



One of the major social functions of the Fall season in the NAL Village was the Halloween Capers sponsored by the NAL Recreation committee. The affair was held in the NAL Cafeteria Saturday, November 1. In this photo, Jerry Reid, (Construction) of the Recreation committee, (in shorts) is shown presenting a trophy to the husband-and-wife team who exhibited the best costumes at the Capers. The winners were James Thompson, Personnel, and Mrs. Phyllis Thompson, of the Director's office. They appeared as "Raggedy Ann and Andy." The Thompsons, who reside in Aurora, are among the husband-and-wife teams working at NAL. (Photos by Tony Frelo, NAL.)

Trophy for best costume worn by a female went to Mrs. Judy Wagner, who formerly was employed by Personnel and who now works for TV Station WLXT in Aurora. She is shown dancing with her husband, Ralph Wagner, (left), who came to the party dressed as Santa Claus. Some folks suggested it was a bit early for Ralph to pose as Santa, but he works in Personnel.

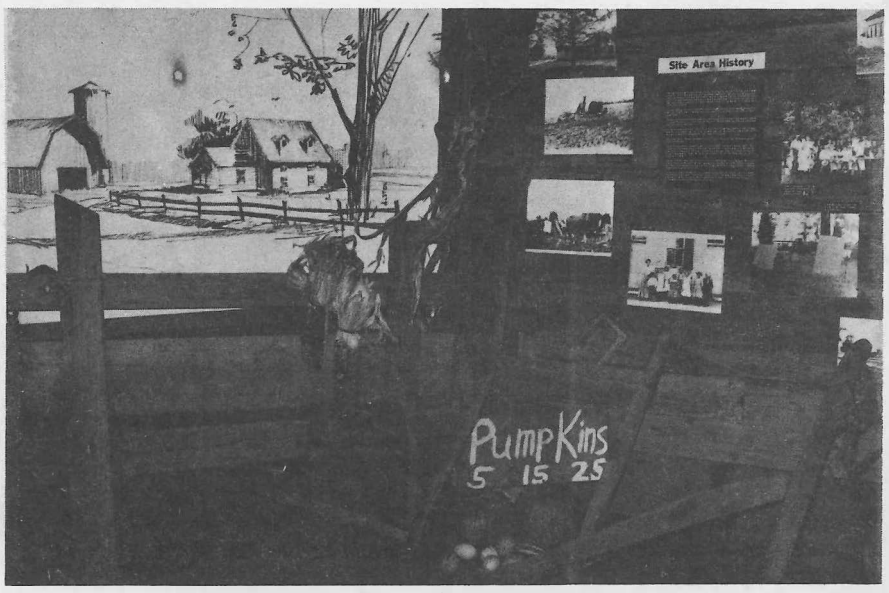
Don Richied, Main Ring, received the award for the best costume worn by a male to the Halloween Capers. Here, he sits in front of a vending machine in the NAL cafeteria to exhibit his Latin disguise. Two weeks later, he was seen at the NAL theater party for "Hair." However, he left his hat and armaments at home.

And who had the most original costume at the NAL party, in the view of the judges? Jack Jagger, Main Ring, showed up as the "Jack of Diamonds" and took the first prize. The "Queen of Spades" shown with Jagger is Miss Carol "Peaches" Weissert, Purchasing.

150 Attend Open House At NAL Exhibit Hall

On Sunday, November 2, 1969 the NAL Exhibit Hall was open to the public from 1 p.m. to 4 p.m. Approximately 150 people stopped in to get a bird's eye view of the Laboratory. The exhibit consists of historic as well as scientific pictures, maps, charts, models and a fifteen minute narrative taped by Dr. Francis Cole, Assistant Laboratory Director, and illustrated by slides.

The "new look" in the Exhibit Hall is the creation of Geno Loro, a member of the Architectural Staff of DUSAF, and Don Llanuza, also of DUSAF. A section of the exhibit entitled "Site Area History" contains a rustic fence, several pieces of farm equipment and pictures of former residents of the area mounted on authentic pieces of weathered lumber; a most interesting and eye-catching display amid the scienfitic explanation of the 200 billion electron volt accelerator.



The NAL Exhibit Hall's historical section.

Youth Conference Delegates Tour NAL Site

The NAL Village looked more than a little like New Year's Eve at Times Square on Friday, October 24th, with twice as many people milling in and out of buildings as one would normally expect and five busloads of tourists moving through the Village streets.

Delegates to the 1969 National Youth Conference on the Atom had arrived to begin their tour of the Laboratory as part of their three-day meeting in Chicago.

Research laboratories normally crowded with equipment became abnormally crowded with humanity, notebooks and cameras.

Included in the tour were stops at the Linac building, where Phil Livdhal and other members of the section described the work being done on the linear accelerator; the Booster section with Ed Hubbard in charge of briefing the delegates; the Main Ring Laboratory where Eric Laukant conducted the tour; and the Radio Frequency Section with Stan Tawzer describing the function of rf in the overall accelerator system.

Several of the buses went out to the construction, and the visitors "christened" the new DUSAF observation tower which had just been completed.

At 11:00 a.m. 250 delegates and teachers on the tour had lunch in the NAL Cafeteria where the Food Service Manager, Bernie Lensmeyer and his crew, managed to have everyone through the lunch line in forty-five minutes!

After lunch, half of the visitors toured the Exhibit Hall with its "new look" and the others walked to the Curia where Dr. M. Stanley Livingston, Associate Director of the Laboratory, welcomed them to NAL after which the movie, "Atom Smashers", was shown.

On Friday afternoon, five members of the Laboratory staff — Donald E. Young, Paul J.Reardon, Ernest I. Malamud, Quentin A. Kerns and Lee C.Teng — led small student group discussions at the Sheraton-Chicago where the conference delegates had an opportunity to further discuss scientific topics.

NAL personnel who participated in the tour agree that the students and teachers showed unusual interest and understanding for the work being done at the Laboratory and that, except for a few "technical difficulties" which were caused only by the large number of people on the tour, the day was a huge success.

Glenn Lee, Linac Engineer, describing the Cockcroft-Walton in the pre-accelerator pit at the Linac Building to delegates to the 1969 National Youth Conference on the Atom.

The Quixotic Quark— Lost or Found?

Has the long-sought quark been found?

Physicists around the world are debating a claim by Dr. Charles B.A. McCusker, a physicist from the University of Sydney, Australia, that lightly ionizing particles photographed in his cloud chambers might be the intensely-pursued quark — the smallest particle known to man.

If verified, the report might well be the most exciting and important physics news story of 1969. The work, if true, could give physicists a guidepost for a relatively simple way of further analyzing the most fundamental processes known.

Robert W. Holcomb, writing in Science magazine, recently said:

"Quarks have roots in two venerable traditions of natural science — explanation through the use of physical models and belief in the mathematical nature of matter. In the 19th Century, chemical behavior was described in terms of the atomic model. This model, in turn, was described during the first third of this century by a model consisting of electrons, protons and neutrons. As more particles were discovered, however, the physical models were pushed into the background and replaced by mathematical systems incorporating quantum physics, special relativity, and a concept of symmetries."

In 1964, the Quark was originally postulated as a mathematical device by Murray Gell-Mann and George Zweig. Gell-Mann, a professor of physics at California Institute of Technology at Pasadena, was a lecturer at the NAL summer study in Aspen this year.

According to Gell-Mann, the Quark was named during a conversation between Gell-Mann and Richard Feynman. "Dick and I were batting around some aspects of theoretical physics, and we started to get excited about a new theory and threw out words for our ideas. The theory depended on a triplet of particles, with the right characteristics, and we needed a word for it.

"I started to say 'squeak,' 'squark,' and it came out 'quark.' We loved the word as soon as it was uttered. Much to my surprise, I found the line 'Three quarks for Muster Mark' in James Joyce's' Finnegans Wake.' Nothing could have fitted better!"

The line in Finnegans Wake actually refers to the cuckolding of King Mark in the medieval legend of Tristan and Isolde.

In German, the word "Quark" which literally means "cream cheese," conveys the slang meaning of "Baloney!"

Lewis Carroll's "The Hunting of the Snark" seems to have been written with the search for the Quark in mind. Carroll said:

". . . the Snark is at hand, let me tell you again!
'Tis your glorious duty to seek it!
"To seek it with thimbles, to seek it with care;
To pursue it with forks and hope.
To threaten its life with a railway-share;
To charm it with smiles and soap!
"For the Snark's a peculiar creature, that won't
Be caught in a commonplace way.
Do all that you know, and try all that you don't:
Not a chance must be wasted today! . . .
" 'But oh, beamish nephew, beware of the day,
If your Snark be a Boojum! For then
You will softly and suddenly vanish away,
And never be met with again' . . ."

Office Notes:

USAEC 200 BeV Accelerator Facility

By: Minerva H. Sanders

On October 24, Commissioner Clarence E. Larson and Mr. Kenneth A. Dunbar, Manager, Chicago Operations Office, visited the Area Office and the Laboratory. Other visitors to the Area Office during the month included Dr. Raymond L. Fricken and Mr. Robert P. McGee, Division of Research, Headquarters Office.

Kennedy C. Brooks, our Area Manager, took a short trip to Headquarters during the month while our Deputy Area Manager, Fred C. Mattmueller, took off in the opposite direction to visit the San Francisco Operations Office.

A "cake and coffee" party was held in our conference room on Friday, October 31, to celebrate the birthdays of Jack Kiefer, John Legerski and Andy Mravca. When asked, "Who was the oldest?", there was no reply. Wonder why? Dawn Pitts received a promotion last month and celebrated by going out and purchasing a 1969 dark green, black-vinyl top, air-conditioned, power brakes, tape recorder included (shall I continue?) Mustang. Dawn's constant traveling companion on the week-end is her 22 month old nephew, James Byron. Congratulations are extended to Dawn on her promotion and her SHARP car.

Every Wednesday, from 1:00 p.m. to 3:00 p.m., Louise Schusler and Ruth Salach attend First Aid Classes, which are sponsored by the American Red Cross and are conducted in the NAL Village. They have attended three classes and have five more to go. Mrs. Dorothy Poll, NAL's R.N., is in charge of the classes.

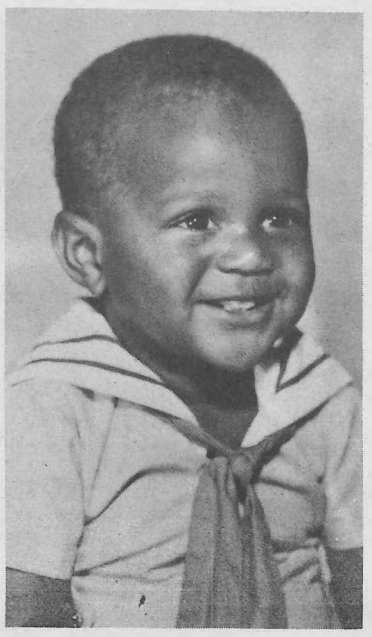
On Friday, October 24, Vernon Kenney and John Ryan took seven school teachers from East Chicago, Indiana on a tour of the Site. Can you imagine the surprise of our two engineers when they found out that instead of SEVEN FEMALE schoolteachers coming out for the tour, there were SIX MEN and only ONE FEMALE . . . and all of that dressin' up was in vain. Better luck next time men.

Ruby Bland gave up her apartment in Glen Ellyn last month and has moved to the Cress Creek Apartments in Naperville. She is quite happy with her air-conditioned apartment and is a little closer to the Site. We now have five employees from this office residing in Naperville.

We extend "get-well" wishes to Irene Donato, the wife of our Counsel, William A. Donato.

Pictured here is Ruth Salach who serves as secretary to Andrew Mravca, Ass't. Area Manager for Technical Operations, and the engineering staff of the Area Office. Ruth, a recent bride, was presented with a Harvest Teflon II Cookware set, which was a gift from her friends at the 200 BeV and the Chicago Operations office.

Ruth Salach



James Byron, traveler

200 BAFFLER:

An executive took his wife to a psychiatrist. When the psychiatrist asked, "What's wrong with your wife," the executive replied: "I don't know, Doc. Er . . . uh . . . What's hername here says I haven't been paying much attention to her lately."

(CORNY huh. Betcha' it made you smile a little anyway.)

Minerva's thought: Sure hope Glen Lackey, Personnel, CH, doesn't read this column and see all of the slang words I've been using, especially since he's in charge of that Practical English Course that I'm taking. (SMILE).

Science and Man

Breaking New Ground In Human Relations

The following article was published in the October, 1969, issue of The Bulletin of the Atomic Scientists. It was written by Dr. Edwin L. Goldwasser, deputy director, National Accelerator Laboratory.

By Edwin L. Goldwasser

Scientists are restless in these days of social strife. As a group, they tend to be concerned humanitarians. They believe in the intrinsically human value of basic research, yet they are repeatedly confronted by its military applications. At the same time, they find their science to be relatively dissociated from major social problems. As a result some are seeking ways to involve themselves more directly with the problems of our society and our cities. Such re-dedication of purpose must certainly be respected, but the constructive pursuit of science should not be abandoned. It has played a dominant role in the emergence of man from darker times than these, and it can still contribute crucially to further cultural, social and technological progress.

At the National Accelerator Laboratory (NAL), we have found it possible to pursue scientific objectives and, at the same time, to be more than mere spectators of the crises which grip our society. We have been able to channel our recruitment, purchasing and contracting policies in ways that contribute to the solution of some of these problems. This is possible, in part, because we are a large and influential scientific enterprise.

Our experience, however, indicates that all scientists, in the pursuit of their research, may have a real opportunity not only to contribute, through their science, to the intellectual and cultural achievements of mankind, but also lead the way in demonstrating that any business enterprise can make a significant contribution to improving the plight of the under-privileged, the under-educated and the under-employed.

The Issue Is Joined

The directorate of the National Accelerator Laboratory would in any case have been dedicated to an active program in support of the principles of minority rights in and around our laboratory. However, early in our history, in the summer of 1967, we had the issue thrust sharply upon us through the refusal of the Illinois State Legislature to pass an open-housing statute.

In response to that action Dr. Martin Luther King Jr. sponsored a tent-in at the newly chosen accelerator site near Batavia, outside of Chicago. This was his protest against the location of a national laboratory in a state whose legislature had almost defiantly refused to enact any open-housing legislation. In the course of that controversy, we had to face a critical decision. We were urged to clarify our position on minority rights by refusing to work on the project at the Illinois site. After much careful thought we decided to ignore this advice and elected to press ahead with the project.

Chicago, like other major American cities, was in a state of crisis. There was an urgent need for jobs, education and housing, particularly for the Negro population. We believed that with a project as large and potentially influential as ours we could make important contributions, not by turning our backs upon the area and its problems, but by consciously conducting our affairs in a manner which would help to solve some of those problems.

Policy Statement Issued

One of our first actions was to promulgate to members of our staff and to many of our outside contacts the "Policy Statement on Human Rights," reproduced here. Each new employee receives this document, and it is displayed prominently throughout the laboratory. As part of that policy, at the time of the open-housing fight, we supported Dr. King in his protest. In addition, we petitioned members of the State Legislature with an urgent — though futile — plea for passage of a strong open-housing statute.

Staff Action

Of course, our activities in these matters have gone beyond the simple enunciation of strong words. These are not what really count. Rather it is the substantive action of the laboratory staff. This action is bound to be closely tied to the working-level understanding of the depth and seriousness of the commitment of the administration to its stated policies. We, therefore, believe that we must play an active role in implementing the policies that we espouse. Rather than delegating total responsibility to people with expertise in these areas, the directorate of the laboratory has acted to implement its philosophy. As this is given public exposure, it exerts influence not only outside the organization, but inside as well. We believe that it has a strong impact on our recruiting, purchasing, contracting and all other facets of the life of our laboratory.

During the last two years, we have made personal contacts with leaders of minority organizations as well as with many Chicago area and national experts on minority problems. We have appeared as witnesses at several town council meetings, supporting the adoption of urgent open-housing legislation.

Certainly the most important single step we have taken is the establishment within our laboratory of an Equal Opportunity Office, headed by Kennard Williams. It has received enthusiastic assistance from the joint venture known as DUSAF, our architect-engineering firm.

Edwin L. Goldwasser

Training Unemployed

One of the first programs in which we participated was the training of 100 young, hard-core unemployed. Two 10-week, pre-apprenticeship training sessions in the operation of heavy earth-moving machinery were sponsored by Local 150 of the International Union of Operating Engineers. Of the initial 100 trainees, 86 completed the course. Of these, six achieved full journeyman standing while the remaining 80 qualified as apprentices. Of the total, 72 are still known to be working as operating engineers. Many have worked or will work on NAL construction jobs.

In another pilot program, a group of young men between the ages of 18 and 30 were recruited from the inner city and trained for skilled technical jobs. After an initial orientation course at NAL, the men were sent to Oak Ridge, Tenn., where they were enrolled in the Training and Technology Program conducted by Oak Ridge Associated Universities. Representatives of NAL's Personnel Office, acting as guidance counselors, kept in close touch with the trainees, who compiled an outstanding record in the training program. On completion of the 30-week course, the men returned to NAL to take up positions as machinists, draftsmen and mechanical and electronic technicians.

In the screening process, overriding emphasis was placed on the apparent motivation of the interviewees. No criteria were imposed concerning previous school or job achievement, police or prison records.

Black Industries

NAL has also developed a list of "Black industries," consisting of minority-group contractors and suppliers who operate businesses relevant to the Laboratory's present and future needs. This effort has been most successful where contracts below $10,000 are involved. Approximately 40 per cent of such contracts for work in the old village of Weston, awarded during the past six months, have gone to Black contractors.

Where larger contracts are involved, there are relatively few minority-group contractors willing to undertake the jobs. For these contracts NAL presents to the bidders, at a pre-bid conference, a sample plan of an affirmative action program for establishing training and jobs for members of minority groups. Bidders are then required to submit, with their bids, their proposed affirmative action programs. Each proposed program is considered together with other features of the bid. Unless it represents a strong positive selection of program elements from the Laboratory's sample plan, the bid may be rejected. Furthermore, when a contract is awarded, the proposed program becomes a part of the contract, and failure to implement that program may be interpreted as breach of contract. So far we have found that contractors, although in some cases reluctant to institute such programs on their own initiative, welcome the opportunity to do so under the external pressure represented by our contracting procedures.

Black Specialists Sought

We have not had uniform success in staffing our laboratory with minority-group employees. Among our non-professional employees more than 20 per cent are Black. Two of the four persons who interview prospective employees are Black. Nevertheless, the more specialized the job bracket, the smaller is the representation of Black applicants. We believe that this is not a shortcoming of our recruiting procedures but rather a reflection of inequities that have been operating for decades.

Career Guidance

In an effort to remedy this situation — to stimulate a flow of inner-city school students into curricula and training programs that will later qualify them for highly skilled technical jobs and professional scientific positions — the Laboratory has initiated a joint program with the Council for the Bio-Medical Sciences. That group has been remarkably successful in guiding qualified Black students into careers in the bio-medical sciences. We hope for similar success in the preparation of young people for careers at NAL in engineering and the physical sciences.

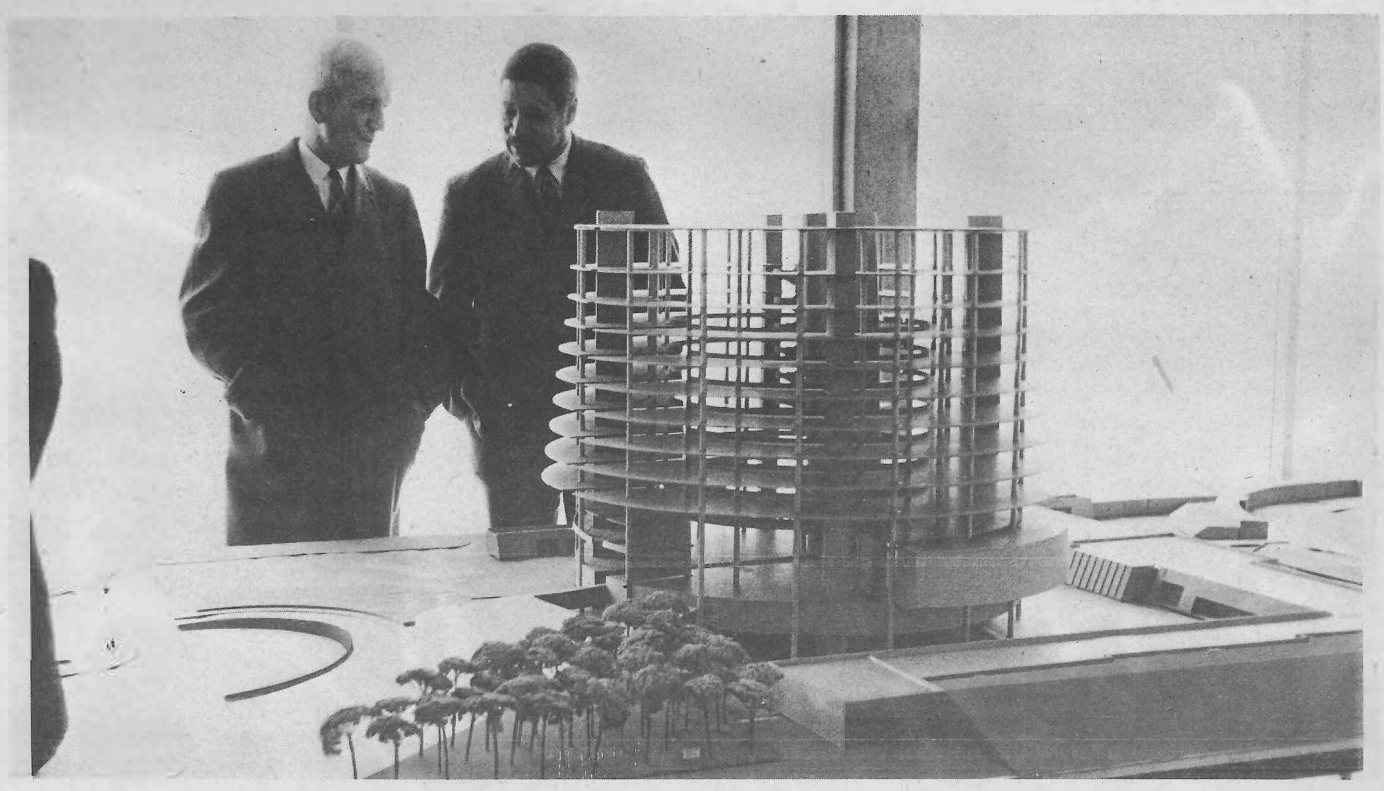
A Unique Opportunity

The National Accelerator Laboratory clearly provides a unique opportunity to contribute to one of the most important activities of man — the discovery of the true nature of the world in which he lives. In the pursuit of that activity, however, we must not ignore, and have not ignored, other urgent problems which are pressing upon our society today. The traditional stance for an organization such as ours, attempting to do a difficult job on a tight schedule, is to "play it safe." On a matter like open housing, for example, it is tempting not to antagonize the anti-open-housing interests. In large construction projects, it is tempting not to impose a stiff non-discrimination policy and thus risk the loss of potential contractors. In purchasing it is eas-

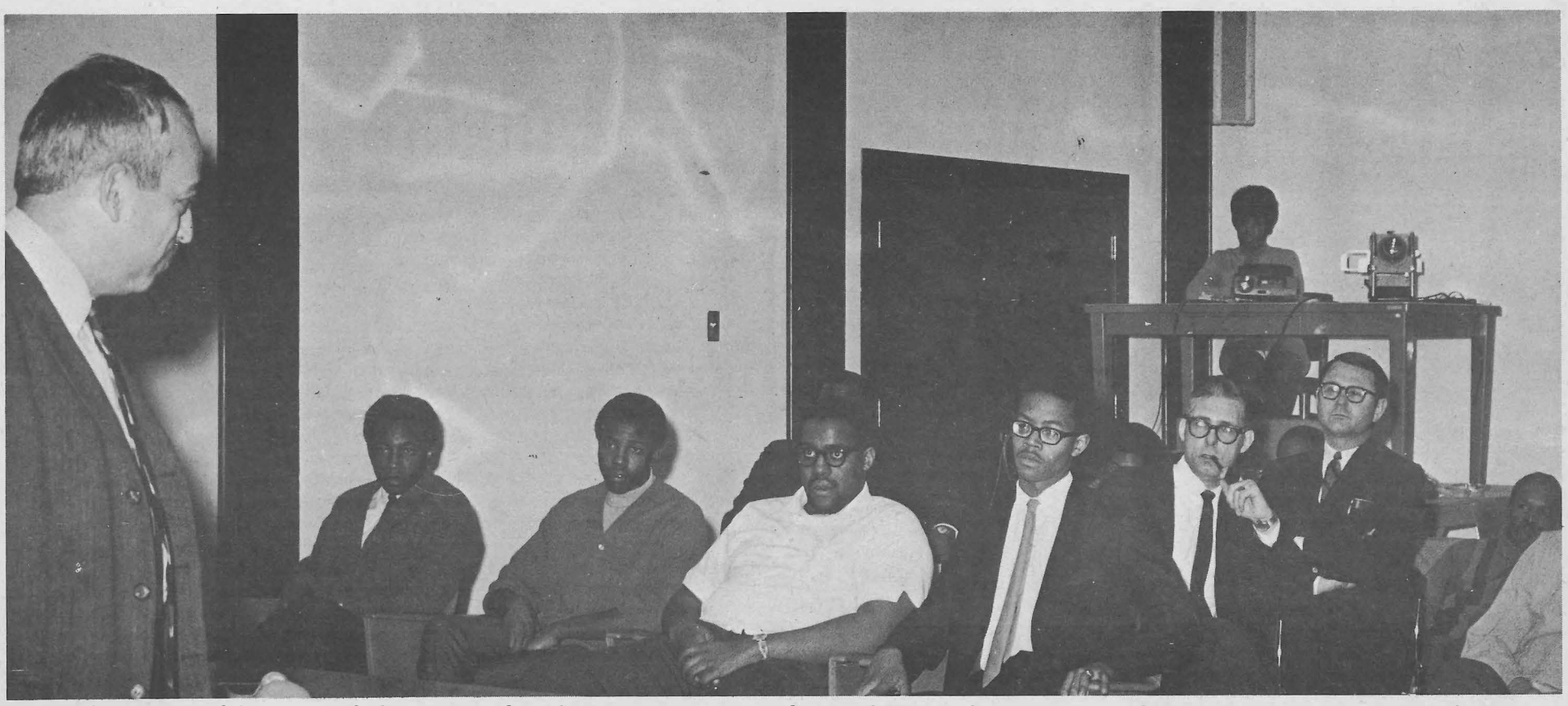
(Continued on Page 7)

"We must play an active role in implementing the policies that we espouse."

E.L.G.



Norman F. Ramsey, president, Universities Research Association, Inc., discusses with Thomas Downs (right) a model of the NAL "footprint" area showing parts of the Linear Accelerator Enclosure, the Booster and a conceptual possibility for the NAL core building. Downs is chief of the architectural staff for DUSAF, the joint venture established for the design and construction of conventional facilities at NAL. Dr. Ramsey is a professor of physics at Harvard University, Cambridge, Mass.



Dr. Edwin L. Goldwasser (left) shown briefing minority members of NAL's first major technical training program for inner-city residents. (Photo by Tony Frelo, NAL.)

(Continued from Page 6)
ier to use only the well-established and better known vendor. In employment it is tempting to hire the trained rather than to train the ready and eager under-employed.

Adaptation Needed

But the condition of our society demands a longer-range view, and in fact we have found that this is also the best short-range approach. We have been willing to accept whatever incremental cost might have been associated with the implementation of these programs, but we believe, in fact, that such a cost has not materialized. In any case, we are convinced that the cost to society of solving these problems through adaptation of its normal activities to these goals is ultimately much less than the cost of initiating special activities, ad hoc, to provide crash solutions which are likely to be of only temporary value.

Local Housing Ordinances

Although the Illinois General Assembly has continued to resist passage of a strong open-housing statute, local ordinances have been adopted in more than 30 communities surrounding the laboratory. Construction is proceeding at the laboratory site. Black workers are involved. Recruitment for technical jobs is proceeding. Black citizens are being hired and trained. Procurement of technical components is underway. Black industry is contributing. It is more appropriate to say "because of" than "in spite of" these actions, our design and construction are on schedule and we have had no significant delays.

Seek Opportunities

It is in part the size of our project which has made it possible for us to achieve some success in these early programs. It is because we are large that we can justify the employment of a staff with a full-time responsibility to discover opportunities through which the laboratory can contribute to the solution of social problems.

But our position as a large enterprise is not unique in the scientific community. In fact, basic science in the United States has become a large enterprise. Its managers control the hiring of many people. They have great influence in educational institutions. They supervise the spending of research funds in excess of a billion dollars annually. They have some influence over the expenditure of development funds at 10 times that annual level.

Yet most individual scientists are members of relatively small research groups or university departments, which can not justify an "opportunity" staff. How can a scientist in a small research group make a contribution?

Influence For Social Ends

Perhaps the most effective way is to use his prestige and influence in the university or industrial organization of which he is a part to establish and to enforce strong policies with respect to minority rights, education, training and employment opportunities. But scientists may wish, in addition, a more direct involvement — one which bears the stamp of their profession. This might best be done through united action as a national community or scientists. As such they could support a major investment of funds and effort. These could be used to establish a national office and perhaps regional clearing-houses where expert advice could be available on matters of recruiting, training and employment of minority-group members, on methods of purchasing and contracting in a manner that will stimulate minority-group involvement in our industry and economy. Any scientist who wished to channel his activities in such a way as to make a positive contribution in this area could avail himself of these services. In this way, fundamental science, which has certainly been one of the most rewarding enterprises of mankind, could not only continue to contribute to the intellectual and technical growth of our society but could simultaneously implement imaginative programs reflecting the dedication of scientists to the precepts of human rights and dignity.

"The condition of our society demands a long-range view and, in fact, we have found that this is also the best short-range approach."

E.L.G.

The Author

Dr. Edwin L. Goldwasser is deputy director of The National Accelerator Laboratory. He is a Physicist, who received his bachelor's degree at Harvard University in 1940 and his Ph.D. in physics at the University of California-Berkeley in 1950. He came to NAL from the faculty of the University of Illinois-Urbana, which he joined originally in 1951. He served on the National Academy of Sciences committee to evaluate possible sites for location of NAL. Dr. Goldwasser and his family reside in the Hyde Park district of Chicago.

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:

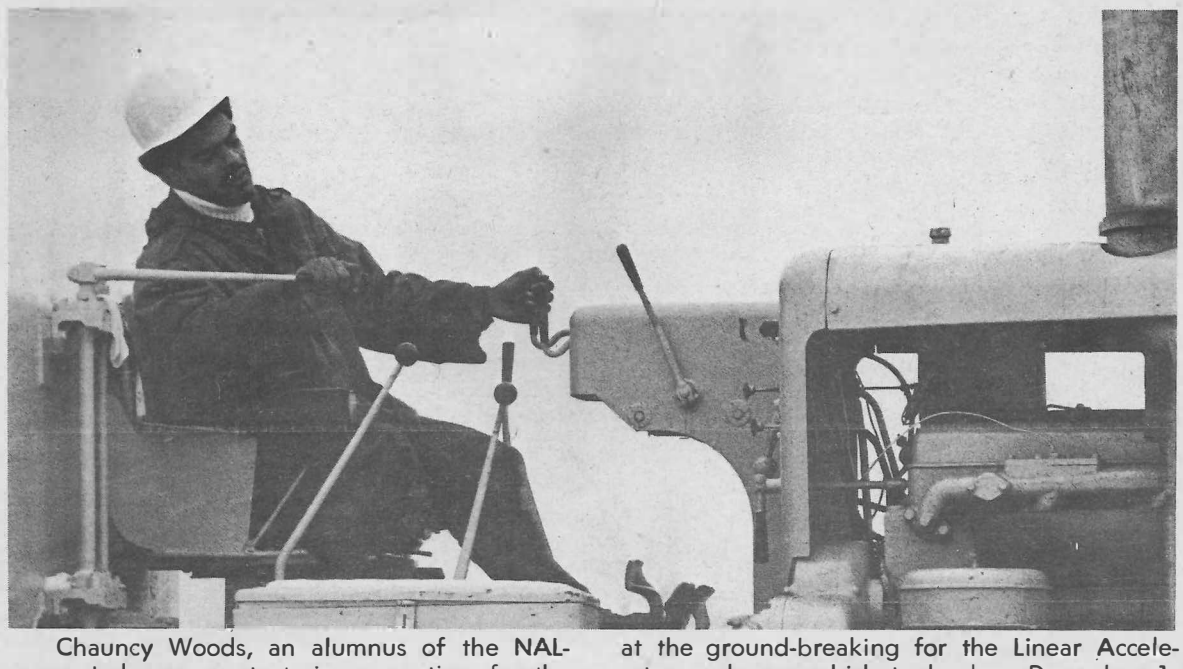
***

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.

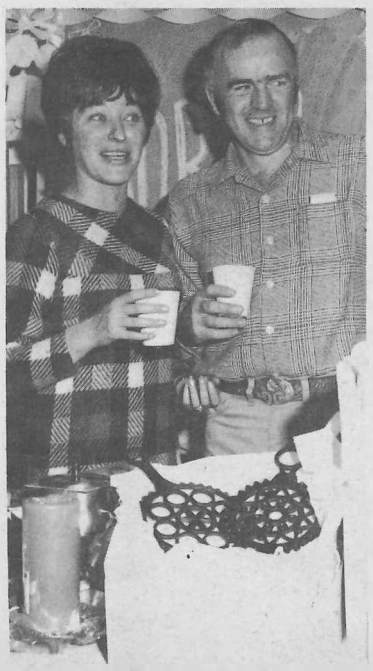
We have seen the creation of NAL near Chicago in a year of social tension and urban unrest, and we have observed the destiny of our Laboratory to be linked to the long history of neglect of the problems of minority groups. We intend that the formation of the Laboratory shall be a positive force in the 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 a new center of technical and scientific excellence. The latter cannot be achieved unless we are successful in the former.



Chauncy Woods, an alumnus of the NAL-supported program to train apprentices for the operating engineers union, exhibited his skills at the first ground-breaking held at the Laboratory. Here, Woods operates heavy equipment at the ground-breaking for the Linear Accelerator enclosure which took place December 1, 1968. Woods learned his new trade in a unique program involving labor union, building contractor, and federal government co-operation.



Carolyn and Bob Hines

Farm Manager, Transportation "Merge" at NAL

THE NEWLYWEDS — Mr. and Mrs. Robert L. Hines (the former Carolyn Hoeflein) pictured at a surprise wedding shower given in their honor by their many friends in the Laboratory.

They were married on October 18, 1969 in a quiet ceremony in Wheaton, Illinois and are presently living in the Carriage Woods Apartments in West Chicago.

Carolyn is Supervisor of NAL Transportation and Communication and Bob is Farm Manager for the Laboratory.

Recently, an office colleague of Mrs. Hines voluntarily submitted to the Village Crier a praiseworthy note about her "boss." The article, written just prior to the marriage, was authored by Dotty Stevens. It said, in part:

A very active and energetic lady, worthy of praise for the fine job she is doing, is Carolyn Hoeflein. They say good things come in small packages and this is certainly true where Carolyn is concerned.

Since taking on the Transportation and Communication Department, she has, willingly taken over all the responsibilities and more that make up at least one of the most important sections of the Lab.

Her duties are many and varied. Phone and equipment changes, coordinating Transportation, a rash of legal forms which must be kept, Administrative Assistant, preventive maintenance, accident, repair and excess procedures for government vehicles and business relations are just some of the areas in which Carolyn has to extend herself.

Beyond this, she is able to keep a fine employee relationship not only with her own group but with all the many people she comes in contact with everyday. Although her position is demanding, she is always ready to lend a sympathetic ear to any problems that may arise. With a smile in her voice as well as on her face she is always willing to lend a helping hand.

We'd like her to know that her efforts aren't going unnoticed and that the people working with Carolyn are genuinely proud.

Ode to NAL Draftsmen

The "unsung hero" — the man of the hour
Like it or not we're in his power.
With pencil, scale, eraser
It all begins on paper.
Let's give him his due
His just reward
We'll feature him
In picture and word!

Without the designers and draftsmen of the National Accelerator Laboratory, physicists, engineers, technicians and machinists would be shifting from one foot to another waiting for a "picture" — a detailed, precise sketch of the components of the accelerator before proceeding to put the machine together.

Drafting Started in 1967

The first known drawing of record done by an employee of the National Accelerator Laboratory is dated October 2, 1967, and it was drawn on the tenth floor of the Executive Plaza, Oak Brook. It is a sketch of an experimental half-scale cavity for the linear accelerator. At this time, the drafting section of the Laboratory contained one person; today there are 46 designers-draftsmen working at the many drawing boards in the Laboratory. Thus far, there are approximately 4,000 drawings in NAL'S files, which does not take into account the countless numbers of unnumbered sketches that are a prerequisite to a final drawing.

Nationwide Background

Of course, through the years before the NAL was formally established, thousands of man-hours of very qualified draftsmen were devoted to the development of various concepts for the 200 Billion Electron Volt proton synchrotron being built now.

Their work was done at a number of diverse scientific research centers — among them, Lawrence Radiation Laboratory in California, Midwest Universities Research Association in Wisconsin, Brookhaven National Laboratory, in New York, etc. And of course, there were the dreams of high energy physicists at such widely-separated universities as Harvard, MIT, Columbia, Caltech, Chicago, Princeton, Wisconsin among others.

Highly-Qualified Group

NAL'S Personnel office has aggressively recruited some of the best draftsmen available in the middle-west and other regions of the United States to work for various scientific and technical groups at NAL. In addition, DUSAF, the joint venture concerned with the conventional architectural-engineering work at the Laboratory, also has a highly-qualified group of draftsmen assigned to various sections. And, some of the sub-contractors working at NAL also have staffs of draftsmen to call upon for their planning.

Sooner or later, it appears, every idea gets down on paper — or at least almost every idea. They may concern drift tubes for the Linac or a new door for the cafeteria; a new road sign marking the route to the construction site or a tiny segment of the massive main ring, which is four miles in circumference.

Storehouse Planned

There are plans to establish an archive of drawings by the draftsmen for NAL — a fireproof center that will retain, for posterity, the ideas, etc., that were considered as the world's largest scientific research instrument was built. In a sense, today's paper becomes tomorrow's history — a veritable storehouse for scholars interested in the history of science and technology.

Although we have pictured the draftsman in a light-hearted manner — in cartoon form, — they are a group of dedicated, hard-working individuals, without whom the Laboratory could not function, and whose contributions to the Laboratory are immeasurable.

Hoping we have not omitted anyone, we salute the following designers and draftsmen of the National Accelerator Laboratory:

Main Accelerator Group

Harry Barber
Jack Jagger
Walt Pelczarski
Donald Olson
Andrew Oleck
Dwaine Johnson
Charles Wilson
Richard Hauser
George Zielbauer
George Kukla
Howard Fulton
Melvin Ewing
Edward LaVallie

R. F. Group

Gus Rehbein
Robert McLinn
Tom Schmitz
Chuck Grozis
Gilbert Robinson

Experimental Facilities

Ed Scholefield
Ken Fitzgerald
Theo Young
Jim Pellebon
Al Gallager

Booster Group

Dick Nelson
Dave Sanders
Bob Olah
Ernie Soderman
Fred Browning
Leno Mapalo
Homer Clover

Linac Group

Larry Sobocki
Art Skraboly
Don Breyne
George Nosal
Ron Smith
George Zibrun

Beam Transfer

Herm Stredde
Robert Haring
Carlos Velazquez
Richard Smith
Richard Krull
Joel Friedl
Ray Mars
Jim Edwards

NAL Site Construction

Bill Pear
Joe Volant

P.S. Webster's Seventh New Collegiate Dictionary defines a draftsman as (1) one who draws legal documents or other writings, (2) one who draws plans and sketches, (3) an artist who excels in drawing.

NAL Christmas Dance Set For December 20

The New Orleans Room of Pheasant Run Lodge in St. Charles, Illinois will be the setting for the second annual NAL Christmas Dinner Dance on Saturday, December 20th, 1969. Plans made by the NAL Social Committee include a cocktail hour (cash bar) from 7:00 to 8:00 p.m., followed by a roast beef dinner (wine included).

Buddy Everett's Orchestra will supply music for dancing following dinner, guaranteed to please the young and the "slightly" older alike!

Tickets are on sale for $5.00 each from members of the Social Committee: Joann Baaske, Accounting; Jody Eskey, Personnel; Jeff Gannon, Booster; Margaret Kasak, Linac; Mark Kibilko, Main Ring; Gayle Notley, Village Management; Jerry Ortlieb, Linac; Marilyn Paul, Material Services; William Pear, Village Management; Jose Poces, Model Shop; Jerry Reid, Construction; Don Richied, Main Ring; Helen Severance, Public Information; Phyllis Thompson, Director's Office; Jim Vesely, Radio Frequency; Carol Weissert, Material Services.

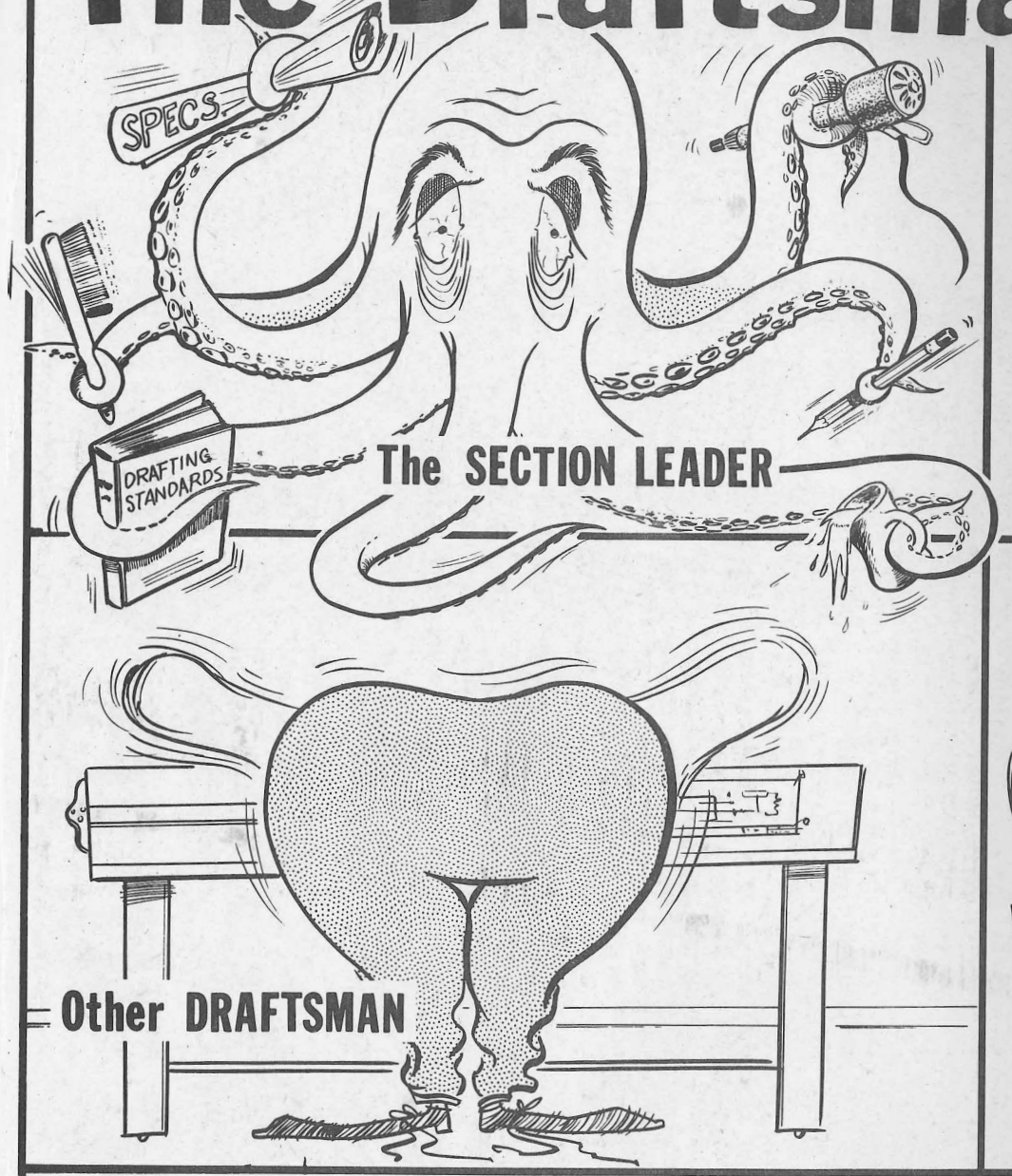
Newcomers to the NAL Family will enjoy the rustic atmosphere of the Pheasant Run Lodge complex, located on Highway 64, three miles east of St. Charles, or four miles west of Highway 59. The "New Orleans Room" is so named because it opens off "Bourbon Street" in the Lodge on which many small variety shops are also located. The Pheasant Run Theatre and overnight accommodations are also a part of the complex.

A Look at Loro . . .

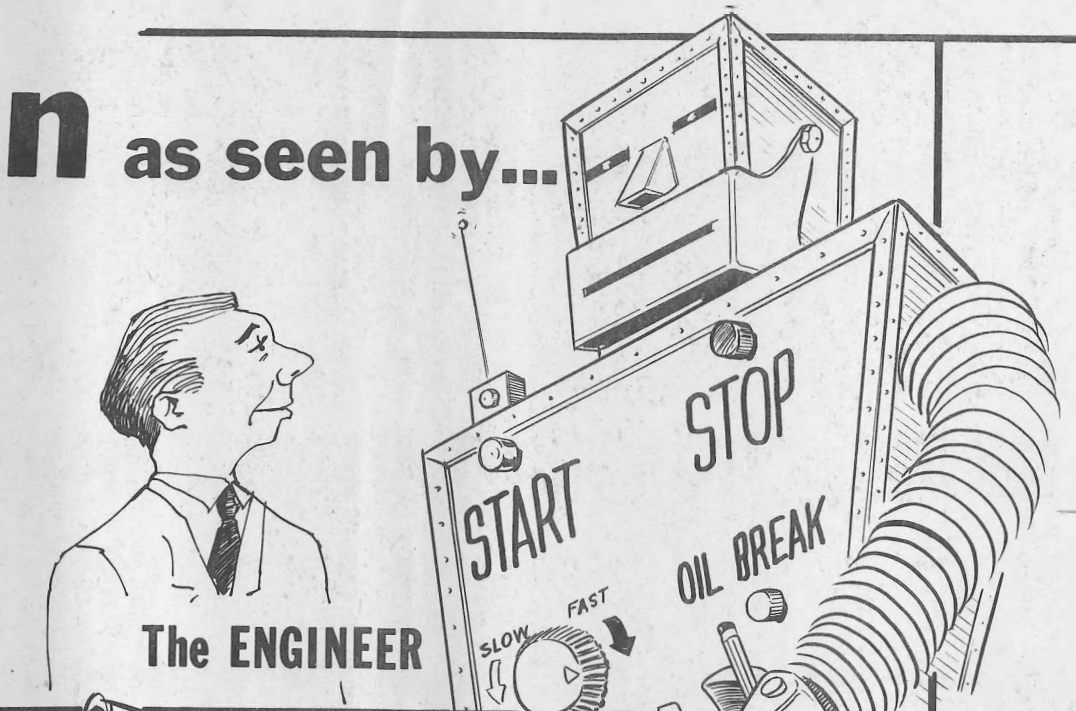
Geno Loro

What is the image of th draftsman — in reality and i fantasy? Geno Loro, DUSAF' talented artist, has been ol serving his colleagues in th various drafting rooms in th months since he joined th staff of the architect-enginee ing joint venture concerne with developing conventiona facilities for the 200 VeV pro ton synchrotron now unde construction near Batavia, I linois. On the following page Loro's original impression are recorded for posterity an for your edification an amusement. They are offere in a light-hearted mood b Loro, who resides with hi family in suburban Brookfield

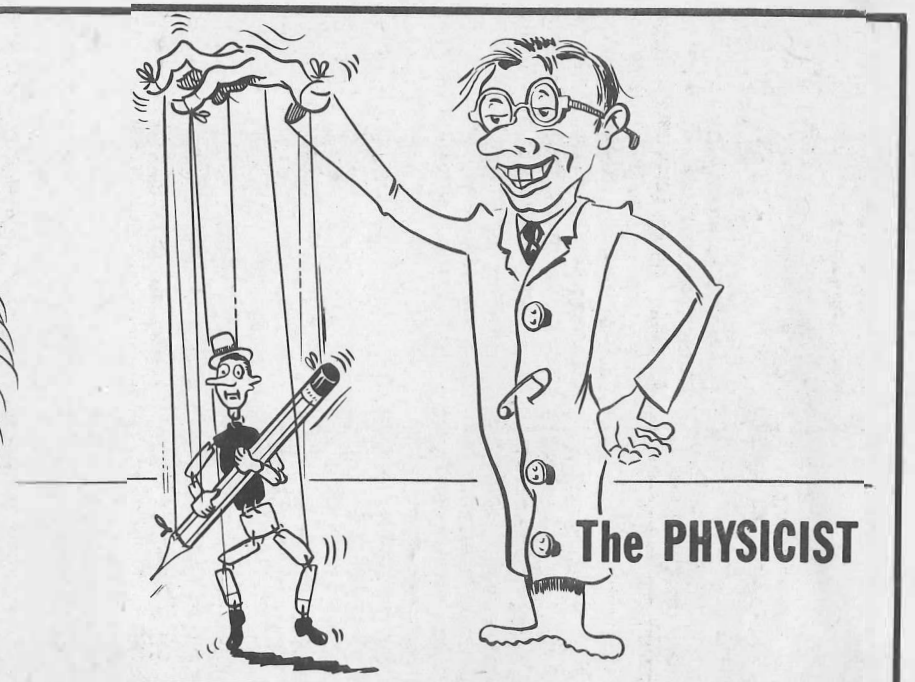
The Draftsman as seen by...



The SECTION LEADER



The ENGINEER

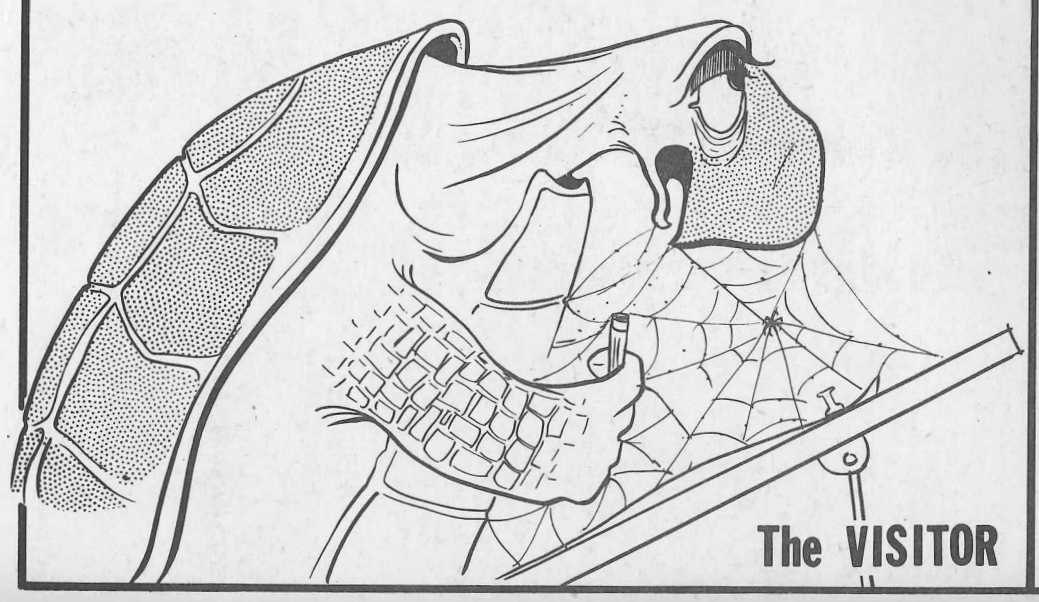


The PHYSICIST

Other DRAFTSMAN

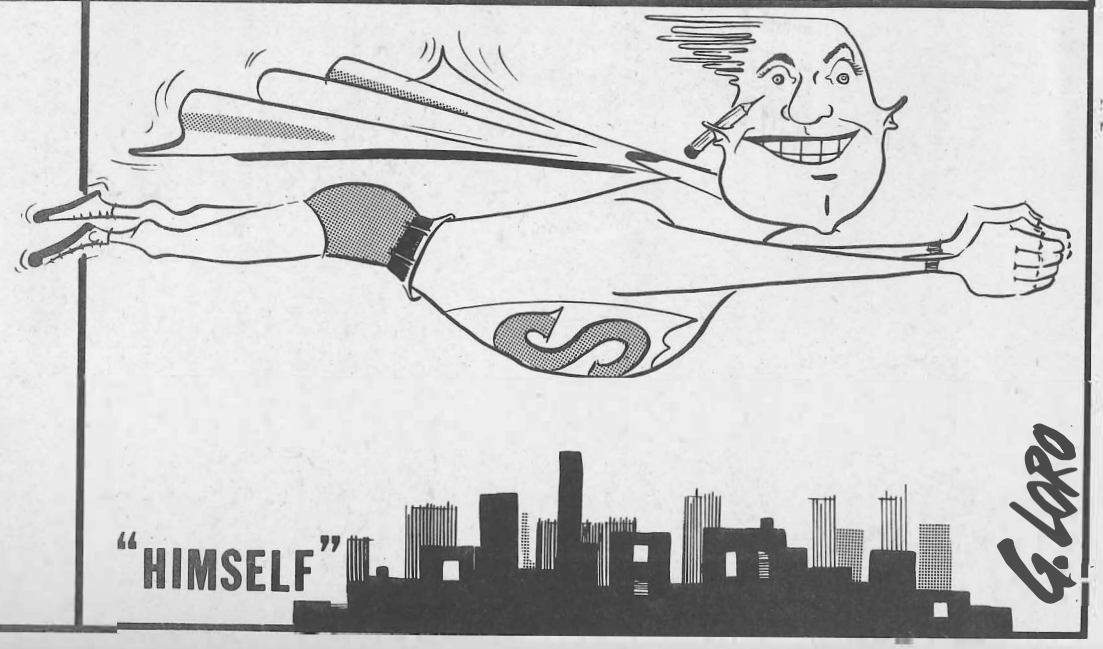
The STOCKROOM CLERK

REPRODUCTION FACILITY



The VISITOR

The MACHINIST



"HIMSELF"

New Members Of The NAL Family

The following biographical sketches of new members of the NAL Family includes those who have recently joined the various scientific, technical and administrative groups. It was written by Mrs. Joan Maute of Public Information from information supplied by Mrs. Jody Eskey, Personnel.

CHARLES O. ANDRLE lives in Downers Grove and works as a technical specialist with Technical Services. He has attended several schools, including DeVry Institute of Technology.

* * *

JOHN STEVEN BOBBITT, of Naperville received his M.S.E.E. from Purdue this year ('69). He is now an engineer with Linac.

E. WARD BOSWORTH holds a B.S. from the University of Rochester in engineering and chemistry ('45). He worked for Komarek-Greaves in Rosement, Illinois before becoming an engineer with A-E Site Planning. He lives in Arlington Heights.

ANNE N. BURWELL can be found in Experimental Facilities where she is an administrative assistant. Before coming to NAL she attended several schools, including Washington University and St. Louis University. She has had previous experience working as an administrative assistant with Argonne National Laboratory. She is from Westmont.

SHIRLEY J. BURTON lives in Maywood and works in Experimental Facilities as a clerk. She attended Proviso East High and Freeman Business College in Oak Park. Before joining NAL she was a typist at the U. S. Supply Depot in Hines, Illinois.

* * *

JOHN W. COFFEY formerly worked for Douglas Air Craft as an assembly man. Now he's a new technician with the Booster Group. He attended Lyons Township High and LaSalle University. He lives in Wheaton.

HELEN CAHILL attended Harlan High in Harvey, Ill. and Hyde Park in Chicago where she still lives. In the Village she spends her time in the Cafeteria where she is a cafeteria attendant.

DAVID C. CAREY is new to the NAL area and does not as yet have a local address. Should you want to find him, try Experimental Facilities where he is a programmer. He holds a B. S. ('62, physics), from M.I.T., and a Ph.D. ('67) from the University of Michigan.

BETTY ANN CARTER travels daily from Batavia to Beam Transfer where she is a new clerk. She went to Batavia High and Moser Secretary School. Before joining the NAL family she worked with the Kane County Sheriff's Office.

DAWN E. CHARTRAND attended Bogan Jr. College in Chicago and has worked for Sears Roebuck in the catalog department. She lives in Worth and is a new scanner with the Physics Research Group.

LOUIS J. CLAVELLI holds a B. S. ('61) from Georgetown University, an M.S. and a Ph.D. ('62, '67) from the University of Chicago, all in physics. He was with Yale University before joining the theoretical Physics Group where he is a physicist. He recently moved to West Chicago with his family.

HOMER D. CLOVER of Big Rock is a new Designer with Booster. He attended Glendale Junior College (California), Milwaukee School of Engineering, and Famous Artist School (Westport, Conn.).

WILLIAM S. COUCH works with Material Services where he is a material service clerk. He attended East High in Aurora where he still lives. Before coming to NAL he was a salesman for Pince's Floor Covering.

JOHN A. CZAJKOWSKI is new to Aurora and to Purchasing where he is a junior administrator. He attended Hamtramk High (Michigan) and Indiana University. While in the Air Force he was a procurement technician.

* * *

LARRY K. DALE, from Pittsfield, works with Main Ring as a technician. He attended Western Illinois University and Northrup Institute of Technology (Inglewood, Caifornia).

WILLIAM MICHAEL DOLAN attended Rice High and DeVry Institute of Technology, Chicago. He lives in Chicago and works as a technician with the Linac Group.

* * *

HELEN M. ECKER lives in St. Charles and formerly worked as a secretary for the St. Charles Manufacturing Company. She is now a secretary for Technical Services. Helen attended Elgin High and Ellis Business College.

D. A. EDWARDS is new to Accelerator Theory and to Aurora but not to physics. This new physicist has a B. A. from the University of California at Berkeley ('50, physics) and a Ph. D. from Cornell University ('61, experimental physics). He also was an associate professor of physics at Cornell.

* * *

DONALD J. FEARNLEY was an engineer assistant with Argonne before joining Technical Services as a technical specialist. He lives in Hinsdale and attended Durfee High School and electronic schools.

JOHN L. FOSTER JR. lives in Aurora. He attended Aurora East High, Southern Illinois University and Joliet Junior College. Before joining Accounting as a senior clerk, he was a cost accounting supervisor for National Business Company.

* * *

ALVIN GALLAGHER moved to Woodridge from San Francisco this Fall. He holds an M.E. ('53) from the International Correspondence School and was a technical staff associate at the Stanford Linear Accelerator Center. Now he can be found in Experimental Facilities where he is a new engineer.

WALTER E. GARDTIELLA is a new instrument machinist with Technical Services. He has attended trade schools and was previously a model maker for Sunbeam. He lives in Wheaton.

VICTOR GARZOTTO attended Fenger High and worked for Tut Hill Pump Company. Now he drives from Chicago to the Main Accelerator Group where he is a technician.

JOSEPH J. GOMILAR JR. was a member of the U. S. Navy for four years. He recently moved to West Chicago and Beam Transfer where he is a technician.

KATHLEEN GRADY attended Lockport Central High in Lockport where she still lives. Contracts and Legal now claims this secretary who used to work for Argonne.

ELIZABETH C. GREEN a clerk with Accounting, used to work for Kroehler Manufacturing Company. She attended Morton High School and now lives in Naperville.

LEONARD A. GRIMSTEAD is a new administrative assistant with Village Services. He attended Chicago City College and the College of DuPage near Glen Ellyn where he lives.

ERNEST GUZMAN lives in Aurora where he used to work for the River Valley Chemical Company. He can be found in the Mail Department where he is a clerk.

* * *

MERLE HALDEMAN JR. went to Leyden High and DeVry Institute of Technology in Chicago. While in the U. S. Navy he attended Radar School. He is a new technical specialist with the Booster Group from Downers Grove.

RAYMOND HANET received a B. S. ('60, physics) from the University of Rochester and a Ph. D. ('67, physics) from the University of Illinois at Urbana. He recently moved to Aurora from Urbana where he was with the Physics department at the University of Illinois. He works with Experimental Facilities as a physicist.

HOWARD L. HART is a technical specialist with Experimental Facilities. He attended DeVry Institute of Technology and Cabrillo College. He lives in Arlington Heights.

DONALD ROBERT HATHAWAY is a recent addition to the Main Ring Group where he is a technician. He went to North Thurston High and while in the U. S. Navy was a jet machinist. The Hathaways are new residents of Woodridge.

JOHN B. HECKMAN attended the University of Chicago and worked there as a programmer. He still lives in Chicago but now is a programmer for the Main Accelerator.

EDWARD F. HIGGINS JR. just moved his wife and five children to Lombard. This new electronics engineer holds a B.S.E.E. and an M.S.E.E. ('61, '64 from Newark College of Engineering. He works with the Radio Frequency Group.

GEORGE F. HILL is a new addition to the Main Accelerator Group. He lives in Chicago where he attended Tilden Technical High School and Wilson Junior College. He is a senior technical aide.

DELBERT L. HOFFMAN lives in Hinsdale. He went to Argo Community High School and worked at Argonne. He is a technician with the Beam Transfer Group.

WILLIE HOWARD is the new warehouse man for Material Services. He went to Proviso High and formerly worked for American Can Company. He lives in Maywood.

* * *

LEONARD M. INDYKIEWICZ went to Lemont High and several trade schools. He worked for Argonne before joining the Booster Group as a technician. He lives in Lockport.

ERNEST C. IORIATTI is a new instrument machinist from Naperville. He attended Austin High School and works in Technical Services.

* * *

FRANK P. JASEK lives in Wheaton. In the Village he can be found at Technical Services where he is a machinist. He attended Austin School and previously was with Automatic Electric Company.

WALTER R. JASKIERNY went to school in Chicago, his home town. He is an alumnus of Gordon Technical High and DeVry Institute of Technology. He is using his experience with Beam Transfer where he is a technician.

* *

MARVIN E. KOKUSKA is from Gary. He went to Farragut High and Allied Trade School, both in Chicago. He works in the Machine Shop as an instrument machinist.

RICHARD A. KRULL is a senior draftsman from Aurora. He went to West High and worked for Caterpillar, both in Aurora. He works with Beam Transfer.

WILLIAM W. LEE recently joined Accelerator Theory as a programmer. He holds a M.S. ('64, engineering mechanics) from Duke University and is presently working on a Ph.D. at Northwestern. He lives in Chicago.

ROBERT J. LENSKI holds a B.S. from Purdue University ('66 electrical engineering). Before joining the Beam Transfer Group he was a design engineer at Pollak and Skan. An electronic engineer, he comes from Chicago.

* * *

RAY W. MARS from Downers Grove is a senior design draftsman. He went to Sullivan High and Illinois Institute of Technology. He works with Beam Transfer.

THOMAS A. MARSHALL, an engineer, is new to Wheaton as well as the Experimental Facilities Group. He is a 1969 graduate of the University of Wisconsin (B.S. math and engineering physics.).

CLINTON MARTIN went to Edward and Bell High School and several trade schools while he was in the U. S. Army. He lives in Aurora. Radio Frequency is the group that has added this new technician.

MICHAEL A. MASCIONE comes from Hanover Park. He went to St. Francis High School in Wheaton and Lewis College (Lockport). He is a construction inspector with Village Service.

RAY K. MEISNER is a recent addition to the Machine Shop. He went to Lombard High School and International Correspondence School. Ray is an instrument machinist from Wheaton.

WILLIAM CHARLES MEYER of Joliet is a new warehouse man with Material Services. He went to Joliet High School.

DELMAR F. MILLER JR. recently joined the Booster Group. He comes from Joliet where he attended East High and worked for By Rite Furniture and Appliance. He is a lab technician.

DONALD JOHN MILLER is an alumnus of Reade High (Mountaindale, Penn.) and several trade schools. He lives in Aurora and works as a material service clerk in Material Services.

* * *

ARTHUR W. NEUBAUER holds a B.S. from the Illinois Institute of Technology. ('67) Arthur, our new engineer, lives in Downers Grove. He works with Technical Services.

LA MOYNE R. NIELSEN has a short drive from Warrenville to Village Maintenance. He attended West Chicago High School. He is a new maintenance man.

* * *

JUNE OLSEN is a new secretary with Personnel. She went to Delta High (Hamilton, Ontario) and West Suburban Business College (Oak Park). She lives in Wheaton.

* * *

LYNN LELAND PALMER is from Aurora. He went to St. Paul High in St. Paul, Virginia. He can be found almost anywhere working for Farm Management as a groundsman.

SHIRLEY PORTER lives in Aurora where she used to work for Nabisco. She is still working with food, in the NAL Cafeteria, as a cafeteria attendant. She went to Washington High School in Joliet.

* * *

PIERRE RAMOND moved his family to Wheaton a short time ago. A new physicist, he holds a BS.. from Newark College of Engineering ('65, electrical engineering) and a Ph.D. from Syracuse University ('69, physics). He is working with the Theoretical Physics Group.

JOHN RAMUS has joined Technical Services. He attended Batavia High School, where he lives. He is an instrument machinist.

DELORES RAY is a clerk with Radio Frequency. Before joining the NAL family she went to school in Richland Center, Wisconsin and worked for the Kroehler Manufacturing Company. She comes from Naperville.

SANDRA RUMPLE went to West Aurora High School and Monticello College before becoming secretary for Hawley Products in St. Charles. She lives in Geneva and is using her secretarial talents in Public Information.

* * *

SANDRA SANDERSON recently joined the Cafeteria as a cafeteria attendant. She used to work at Ray Roberts in West Chicago where she also went to West Chicago high school. She lives in West Chicago.

KENNETH M. SEEPER is a new addition to A-E Site Planning where he is an engineer. He has a B.S. from Tri-State College ('50, electrical engineering) and lives in Woodridge.

(Continued on Page 11)

Poillon Announces Richard J. Auskalnis Promotion In Purchasing Section

Donald K. Poillon, Director of Business Administration, has announced the promotion of Richard J. Auskalnis to the position of Purchasing Manager of the Laboratory, effective November 1, 1969.

In this new position, Auskalnis has a staff of six buyers, an expediter and an office staff of five. The buyers include Willard Kautz, Purchasing Administrator; Junior Purchasing Administrators Alvin Adkins, Arlyn LaPorte, John Burdette, John Czajkowski and Ray Lewandowski. Richard Scherer is the Expediter and Carolyn Gifford, Filomena Broccolo, Joy Martinez, Bonnie Ortlieb and Cathy Beyer comprise the office staff.

Before joining the staff of NAL in April, 1968, Auskalnis was Assistant Purchasing Agent at IIT Research Institute, Chicago. He is an active member of the National Association of Purchasing Management and a committee member of the Annual IIT Seminar on Purchasing Professional Development. Recently Dick was named Vice Chairman of the pre breakfast workshop for the National Conference of Purchasing Agents which will be held in Chicago in May, 1971.

Auskalnis and his wife, Adela, live in the Foxcroft area of Glen Ellyn with their seven children.

New Members

(Continued from Page 10)

JAMES SCHLUCHTER of Glen Ellyn joined Booster a short time ago as a technician. He comes from Glen Ellyn. Before joining NAL he went to Englewood High School and worked for International Harvester, both in Chicago.

JOHN A. SHIMKUS attended Joliet Township High School and holds a diploma in drafting from Joliet Junior College. A new technician with Main Accelerator, he lives in Villa Park.

RICHARD L. SMITH is a draftsman with Beam Transfer. He went to Joliet Township High School and Juoliet Junior College in Joliet where he lives.

LOWELL JAMES SWANK moved to Naperville not long ago. A physicist with Theoretical Physics, he holds an A.B. from the University of California at Berkeley ('60) and a Ph.D. from the University of Illinois at Urbana.

LAWRENCE E. TATE is from Chicago. He attended Dunbar High School and worked at the Hotel Windermere, both in Chicago. He is now a lab assistant with Beam Transfer.

DENNIS THERIOT came to NAL from the Los Alamos Scientific Laboratory. He holds three degrees in physics, a B.S. from Duke University ('60), an M.S. ('61) and a Ph.D. ('67) from Yale University. He is a physicist with Radiation Physics. The Theriots are new residents of Wheaton.

EDWARD B. TILLES joined Beam Transfer as a technical specialist a short while ago. He attended Teaneck High School in New Jersey and several trade schools in the U.S. Navy.

MARY ELLEN TOENIES lives in Wheaton. She went to Lyons Township High and worked at Argonne before joining the Physics Research Group as a secretary.

MARY F. TURK spends her time in Physics Research where she is a scanner. She went to Francis Academy and lives in Joliet.

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HENDRICK J. VANLEESTEN graduated from Providence College in Rhode Island in 1933 and was an instrument maker at Massachusetts Institute of Technology. He is a new addition to the Booster Group where he is a technical specialist.

* * *

JAMES K. WALKER just moved to Glen Ellyn and to Experimental Facilities where he is a physicist. He holds a B.S. and Ph.D. in physics from Glasgow University in Scotland. Previous to joining NAL he was an associate professor at Harvard University.

DONALD WEINGARTEN received his Ph.D. from Columbia this year. He also holds a B.S. from Columbia ('65). He is a physicist with the Theoretical Physics Group.

* * *

TAIJI YAMANOUCHI is a physicist with Experimental Facilities. He holds three degrees in physics, a B.S. and an M.S. from Tokyo University ('53, '55) and a Ph.D. from the University of Rochester. The Yamanouchis recently moved to Glen Ellyn.

* * *

GEORGE M. ZIELBAUER is a new design draftsman with the Main Accelerator Group. He holds a B.S. from Chicago Technical College ('64) and lives in Aurora.

RICHARD A. ZYCH, from Aurora, attended Schurz High School in Chicago. Before joining Material Services as a clerk, he was an office manager at Reevo Automation Corporation.

William Riches

William Riches Named Plant Manager

Appointment of William Riches as Plant Manager of the National Accelerator Laboratory was announced by Robert R. Wilson, Director, on November 4.

Dr. Wilson outlined Riches' duties by saying, "He is to be responsible for the technical plant, i.e. scientific, technical and utility buildings, the utilities, utility corridors, telephones, power lines, etc., but not such things as the farms, fields, forests and roads for which the Site Manager is responsible. (In general, the purview of the Plant Manager will include things that have been designed by DUSAF.) In many cases the boundary between the Site Manager and the Plant Manager will be a fuzzy one, so good communications and close cooperation will be necessary to avoid needlessly duplicating engineering and service capabilities."

Dr. Wilson also said, "The Plant Manager will be responsible for operation of the utilities and or keeping all records concerning the technical plant. He will not be responsible for setting up or operating experiments nor will he be concerned with the operation of the technical shops. Here again the boundaries may be fuzzy, but in general will correspond to the facilities designed by DUSAF. He will not be responsible for initiating or planning new facilities, but will be responsible for minor construction and maintenance of technical plant."

Argonne Phone Tie-In Now Operating

Automatic telephone tie-lines between Argonne National Laboratory and NAL are now in operation.

To call Argonne from NAL, phone users Dial 6, wait for the dial tone, then dial the 4-digit-extension of the person to be called. Calls cannot be transferred, but must be re-dialed.

Argonne extensions are listed on pages 40 and 151 of the FTS directory.

A few copies of Argonne telephone directories are available from Carolyn Hines at Extension 303.

Poces to Billinge: "Thanks, Pal!"

Jose Poces, Model Shop, has one of those foreign-made autos that is supposed to run thousands of miles in northern Europe without a breakdown. Well, his did break down on Roosevelt Road, west of Wheaton, enroute to work Wednesday, November 19, during the morning rush-hour. Scores of cars streamed by without stopping to aid Jose. But finally one did. It was driven by Roy Billinge, Booster group. Observed Poces: "I'm glad that one of our physicists has a morning towing service that is so efficient and reasonable in price."

Notes From Personnel Office

Promotions at NAL this month:

Richard Mau, in the Machine Shop

Michael Hardy in Personnel

Casimir Tirva in Drafting

Robert Jensen, Technician

Johnny Green, Technician

Frank Cesarano, Material Services

Delwyn Burandt to Technical Specialist

Shirley Bickel to Payroll Supervisor

Richard Auskalnis to Purchasing Manager

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CHANGE OF ADDRESS forms should be filled out for both the Personnel and the Payroll departments as soon as possible after an employee makes such a change. Group leaders are asked to have a supply of these forms available to members of their groups.

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TRANSPORTATION & COMMUNICATION has been transferred from Village Management to Personnel Services, under the supervision of Carolyn Hines. Carolyn will move to the Mail Room at 30 Sauk Boulevard.

* * *

Jim Thompson, Personnel Administrator, has been recruiting at several colleges in the past month. Visits to Tuskegee Institute at Baton Rouge, Louisiana; Tennessee A & I, Nashville, Tennessee; Prairie View College, Prairie View, Texas have all been on his busy agenda, as well as a combined visit with Bill Butler, also an NAL personnel administrator, to the University of Wisconsin at Madison, Wisconsin.

* * *

Mildred S. Meyer, Administrative Assistant, Personnel, is serving for the second year on the Secretarial Science Advisory Committee at Waubonsee Community College, Aurora. Members of this committee come from eight local industries in the Fox River Valley area. The committee meets monthly to formulate recommendations for the secretarial curriculum at Waubonsee, including a summer program which awards a summer study certificate to students upon completion of eight weeks of study in basic typing and shorthand.

* * *

"Congratulations, and thank you," to NAL employees from Ralph Wagner, Personnel, at the close of the recent Crusade of Mercy drive. Two hundred employees responded to the request for contributions to Chicago metropolitan area charities.

* * *

New babies we've heard about: At the Robert Oberholters (Beam Transfer); former NALite Gwen Baker Ruble; the Robert Kolars (Booster); James Klens (Main Ring); the Ed Grays (Linac); Ernie Guzmans (Transportation); Charles Grozis' (Radio Frequency).

The second annual NAL bike race was held during the luncheon hour Friday, October 3. The "winded" winners shown above are: (kneeling) Mel Ewing, Don Ziobro, standing L. to R.: Peggy Arthur, Bob Hively, Barb Rozic, Jo Baaske.

Other bike race winners: L. to R.: Bill Jones, Don Ziobro, Pete Surman, Earl Bowker, Bill Carter.

Plan House Decorating Contest

NAL employees are urged to get into the Christmas spirit by decorating their offices. On December 22, 1969, three "impartial" judges will ride through the Village and judge the office best decorated for the Yuletide season.

If your Section occupies more than one house, please specify which house is to be judged (only one may be entered in the contest).

In The Village...

Friends of Bill Pear, NAL Construction, were offering condolences to him on the loss of his grandmother, Mrs. Bernice Albright, who died as a result of an auto accident over the Thanksgiving Holiday.

Bill makes his home with his grandparents in Brookfield, Illinois.

national accelerator laboratory

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

Do You Have A Friend... Who Is Qualified To Join The NAL Family?

If you do, please help us spread the word about the interesting and challenging employment opportunities that exist at the National Accelerator Laboratory in various areas.

You can assist us in this search for brainpower by telling your friends, neighbors, and just plain folks about the work possibilities for men and women, regardless of color, race or creed, at NAL.

We are seeking applicants in the following areas to fill a variety of jobs at the Laboratory.

- **Electronic Technicians**
- **Bubble Chamber Film Scanners**
- **Scientific Programmers**
- **Electronic Draftsmen**

We appreciate all the help we can get in filling these needs. 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 National Accelerator Laboratory Women's Organization held its first Fall meeting of 1969 on October 16th in the White farm on the NAL site. Shown here are the NALWO offices for the 1969-70 season. They are: first row, left to right, Mrs. Rosemary Billinge, chairman; Mrs. Lois Livingston, secretary; and Mrs. Rosemary Cole, treasurer. Standing are (left to right) Mrs. Janette Rorhrer, vice-chairman DUSAF; Mrs. Jodi Eskey, NAL activities co-ordinator, and Mrs. Janet Read, vice-chairman of new-comers. (Photo by Tony Frelo, NAL.)

N. A. L. Protons Roster

Larry Jackson	Beam Transfer
Roy Justice	Experimental Facilities
Robert Knowles	Linac
Charles Marofske	Personnel
Michael May	Radio Frequency
Bobby McNeal	Booster
Joel Misek	Main Ring
Jeffrey Ruffin	Booster
Earl Sanders	Machine Shop
Edward Stitts	Booster
Larry Tate	Beam Transfer
Jim Thompson	Personnel (coach)
Michael Wilks	Booster
Theophilus Young	Experimental Facilities

By James Thompson

The N. A. L. "Protons" opened their season on November 13, 1969 in the Naperville, Y.M.C.A. Men's Basketball League.

The Protons were unsuccessful in the first ball game, losing to "Prager Movers" 64 to 48.

However, the Protons bounced back the following week with a big win over Doolin Realtors 56 to 46.

The Protons will use their tremendous speed and agility to offset their lack of height. This brand of basketball is exciting to watch and should provide great entertainment for all spectators.

We certainly urge all of our loyal N. A. L. fans to come out and cheer us on to victory.

All basketball games are played at the Naperville High School, located on Route 65, several blocks west of Washington Street. The next scheduled game is Thursday, December 4, 1969 against Naperville National Bank. There is a schedule of all games posted in the cafeteria.

NALWO Appeals for House Furnishings

The National Accelerator Laboratory Womens Organization publishes a monthly Bulletin for its members. The Bulletin is edited by Mrs. Lois Livingston and reported the following activities to members in November.

"Those of you who were able to attend the NALWO meeting on October 16 had the opportunity to see the fine old house that the Laboratory has kindly given for our use. It is located on Eola Road, and in the future any functions or group activities will take place there. However, we would like to make it as comfortable and elegant as possible and to do this we need help. There is no furniture there of any kind, so that, if any of have chairs (hard or soft), couches, tables, cabinets, rugs, cutlery, crockery, etc. that you are longing to get rid of, we would be most grateful to receive them. Don't worry about their condition, which can always be remedied. We shall be glad of anything. Also, there will be a nursery at the house which will require children's furniture, books and toys. Again, if you can oblige, we shall be most grateful. For those of you who, like myself, tried to get rid of all extraneous material before you moved here, perhaps you would consider a donation to NALWO, no matter how small.

Sonia Collins has kindly consented to be our House Chairman, and if you would call her or Jodi Eskey at the NAL Housing Office, we will gladly arrange to collect any items that you may wish to donate.

From the House Chairman

In order to accomplish all that the Chairman has suggested above, the House Chairman needs some help. She would like volunteers for her committee who find housekeeping more fun outside their own homes! Women with station wagons, women with paint brushes, women with sewing machines, above all, women with time and ideas will be most welcome. Call Sonia Collins, 279-2355.

From the Editor

At the meeting on October 16, there were about 35 women (and 20 children). The house and grounds had been put in very good order for us, and it proves to be a most satisfactory place to meet — or will be when we get it furnished properly. There will be activity group meetings there regularly during the winter, and probably another general gathering in the spring. Don't forget the December 20 NAL dance.

It is becoming obvious that we need a name for our new home. White Farm is neither striking nor very appropriate. Doesn't someone have a good idea?"

Recent activities in the NALWO Activity Groups include:

Antiques
(Mary Sandberg, Chairman)

A last call for interested people. If not, the group will be suspended until next fall.

Bon Vivant
(Rosemary Billinge, Chairman)

The Piqueo, 5427 N. Clark Street, Chicago, was the rendezvous for the dinner date held on November 22 at 9:00 p.m. The fare was Peruvian and included over two dozen tasty dishes, accompanied by a Chilean wine, prepared by Moises Asturrizaga and his sister.

Bridge
(Catherine Pehta, Chairman)

A social bridge for beginners as well as experts was held at the White Farm on November 18th.

Gourmet
(Marilyn Dinkel, Chairman)

Dinner party was held at the Carrigans' on November 8th. The next activity will be a Swedish Smorgasbord, to be held at the White Farm on December 6th.

Hand Arts
(Joan Sculli, Chairman)

At the November meeting, the group made Christmas ornaments. The December session will be a candle-making project at the White Farm.

Literature
(Betty Snowdon, Chairman)

The November meeting heard a discussion on books on the USSR stemming from the trip taken by a group from the NAL this autumn. The group is seeking additional members.

Music
(Mary Ann Ryk, Chairman)

An enthusiastic group held a sing-along in October and planned a foreign country Christmas carol session for their November meeting. All voices and instruments are welcome at these sessions, held at 8:30 p.m. in the evenings, with refreshments.

Outdoor
(Bonnie Hubbard, Chairman)

In January this group will climb Mount Ramsey or go skating on the pond at the Phillips farm. More ideas for outings are welcome.

NAL Bowlers Compete For Thanksgiving Bird

By Gayle Notley

Doris Ferrell sets a new record of a 206 women's high scratch game. Doris also holds the honor of women's high series at 556.

It looks like Joy Martinez wants a crack at the high scratch game also. Joy bowled a 200 scratch game November 14th. Keep rolling Joy, you'll make it!

Harland Gerveske has also set a new record of 586 for men's high series.

The 11th Framers, Jack Jagger, Doris Ferrell and Mike Hitt, have just taken over first place. The Trainies Lott Coleman, Carol Renar, and Cathy Cooper are now tied for second place with the Specialists, Harland Gerveske, Janis Gerveske and Donna Pearce.

On November 21st the NAL bowlers were in tough competition for the annual Turkey Night. The following people were the turkey winners: Joy Martinez, Jerry Reid, Doris Ferrell, Harland Gerveske, Marilyn Paul and Don Richied. Happy eating!

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 wil 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 Jody Eskey, Personnel, 14 Sauk Boulevard.

For Sale

Childcraft Encyclopedia, $5.00; Samsonite luggage, 3 pieces, $10; Harris Tweed Material, $10; Train set's, 3, $15; Cosco feeding table, $10; Maple dressing table, $10; Americana Encyclopedia, with year books, $5; Bolex movie camera, best offer; collection of National Geographic Magazines, beginning 1900's, $50; collection of antique baskets, $10. Call 355-3312.

Aluminum Christmas tree, $5: Contact Frank Mehring. Ext. 242.

Complete 1968 set of Encyclopedia Britannica. Like new. $350.00. 6,000 BTU Frididaire air conditioner, $70. Call Pat (Ext. 277) or Andrew 'OLeck (Ext. 251).

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