The Village Crier

national accelerator laboratory

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

VOL. 3 NO. 49 DECEMBER 16, 1971

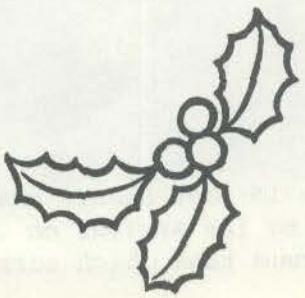
....Santa Claus chatted with Tommy Heim, son of Joe Heim, Experimental Services....

....Also at the party were: (L to R) Joanne Hall (Contracts), Helen Ecker (Technical Services), Santa (North Pole), Lori Nila, daughter of Sharon Nila (Contracts), Carol Weissert (Material Services), Sharon Nila, Liz Foster (Director's Office), sitting....

SANTA CLAUS STOPPED AT NAL TO VISIT THE CHILDREN'S CHRISTMAS PARTY!

The first children's Christmas party at NAL was a huge success! More than 350 youngsters filled the Village Barn with the joy and enthusiasm of the holiday season on Sunday afternoon, December 12th. Liz Foster and her committee served punch and cookies. Santa Claus dropped in for his first visit to the site.

....Kim, Stacey and Robbin Caldwell (children of Al Caldwell, Material Management) checked in with Santa, too....



A BANK IS A BANK IS A BANK----- (By Eric Jarzab, Personnel)

There are computer banks, money banks, savings banks....indeed, there are all kinds of banks. Our friend Webster says that a "bank" is a place where "...a supply of something is held in reserve." Your "interest" brings security for you and your family. Your savings in the bank are often used to help other people, but, nevertheless, are there when you need them. You can make yourself feel secure (and help others) for the next year by making a deposit in the NAL Blood Bank.

So far, about 30 depositors have signed up for the Blood Bank to be held on December 21 in the Village Barn. About 31 more depositors are still needed. This is the LAST CALL for you to feel secure and satisfied.

Those who deposited in September are eligible to make another deposit. Those who were rejected in September should try again this time. DUSAF, AEC and Visitors may deposit to cover their own families, but their donations will not be credited to NAL's 20% participation goal.

Don't delay another day!!! Call Dorothy Poll at Ext. 232 for additional information.

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THE FOLLOWING BOOKS ARE RECENT ARRIVALS AT NAL LIBRARY: Computer Software, Computer Mathematics, and Computer Applications, all by Geoffrey Knight, Cambridge Press; Fitting Equations to Data, Cuthbert Daniel, Wiley, 1971 (Replacement); The Functions of Mathematical Physics, Harry Hochstadt, Wiley, 1971; Condensed Computer Encyclopedia, Philip B. Jordain, McGraw-Hill, 1969; Physics with Intersecting Storage Rings, Course 46, Varenna, Italy, Scuola internazionale di fisica, Academic Press, 1971; Lectures on Elementary Particles and Quantum Field Theory, Brandeis University Summer Institute in Theoretical Physics, MIT, 1970; Guide to European Sources of Technical Information, Colin H.Williams, Hodgson, Guernsey, 1970; Factors in the Transfer of Technology, Endicott House, 1966, MIT Press, 1969; Improving Management Performance, John William Humble, British Inst., 1969.

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HOCKEY FANS...MARK YOUR CALENDAR!

There are 15 tickets left for the Sunday, January 9 hockey trip to see the Chicago Blackhawks play Montreal. (The February 20th Boston trip is sold out.) Busses will leave from Shakey's Pizza Parlor, 110 North Lake Street, Aurora, Illinois at 6:00 p.m. The price of the trip is $12.50 per person; this includes one individual pizza at Shakey's, soft drinks and beer on the bus, hockey game ticket and transportation to the Chicago Stadium. All second balcony seats. For further information, contact Carol Weissert on Ext. 470 or 479.

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....The 15 foot bubble chamber arrives "home" after a temporary stop in The Village, following its arrival on October 25. Hemisphere on the ground is the upper portion of the vacuum tank which surrounds the chamber....

Photo by Tim Fielding, NAL

NAL GROUP BUILDS SUCCESSFUL BEAM MONITOR SYSTEM

The proton beam, for all its intensity and power, has often proved elusive, evading the clutches of even the most sophisticated control systems at the precise moment when it is to be studied. Largely unnoticed, in a corner of the Laboratory, a small group of people has been working feverishly designing and constructing systems that will measure quantitatively the size, position, and intensity of the beam produced by the NAL accelerator as it enters the various experimental areas. Their work was recently rewarded with a demonstration of their "beam profile monitoring and display system" in conjunction with proportional wire chambers and wire ionization chambers.

...Eddie Fuentes, trainee, and Steve Bjerklie with the SWIC and scanner they helped to build to monitor the proton beam in the Neutrino and Meson Laboratories...
Photo by Tim Fielding, NAL

The group has been under the direction of Fred Hornstra, electronics engineer in Research Services who is now working with the controls group of the Accelerator Section. Hornstra came to NAL in 1970 to head this development, following service as chief of operations at the ZGS external proton beam line at Argonne National Laboratory and at Los Alamos. The systems were built under the supervision of Technical Specialist Merle Haldeman, together with Maurice Harland, trainee. Greg Chartrand, technician, and Eddie Fuentes, another trainee, assisted in construction of the electronics. Marilyn Paul, secretary for the group, also helped in the lab.

"I've been particularly impressed with the progress of our trainees," notes Hornstra. "Our group seems to have enjoyed the challenge of our project." Harland and Fuentes were members of the 1970 TAT class at NAL which received technical training at Oak Ridge, Tennessee.

Basically, the system works as follows: Every time a particle goes through the chamber, a wire receives a pulse of charge. A counter and amplifier exist for each wire. The charge is amplified and sent to the miniature counter to be registered. After many counts, the contents of the counters are interrogated and displayed in a systematic manner. The wire which had the most counts appears as the peak of a display on a screen, indicating the most intense portion of the beam. At each accelerator cycle, a new profile is generated and an analysis of the beam properties displayed enables operators to diagnose and alter the beam as desired.

Going one step further, an electronics engineer in the group, Ron Martin, has designed an electronics system to link the proportional chambers to the computer control system in the beam line, so that the readings from the system can be viewed on a screen in the main control room in the Cross Gallery. In order to keep demand on the central computer to a minimum, Martin has also conceived and constructed a control which allows the detection system to operate without a computer. This he calls CAMSAC, "Camac Stand Alone Controller."

...Ron Martin exercising CAMSAC, for read out....
Photo by Tim Fielding, NAL

This technically creative group has also produced a system to monitor and display extracted proton beams as they are directed into experimental areas, a beam so intense that individual particles cannot be counted. A somewhat simpler system can be used to monitor such intense beams. Called SWIC (for segmented wire ion chamber), it collects the charge created by incidental beams without any amplification. The charge from each wire is stored on a corresponding capacitor and periodically the contents of the capacitor are interrogated and displayed on a screen.

Working on SWIC have been Fuentes and J. Bondurant, who is now in Plant Services, with electronics designed by M. Haldeman and constructed by technician Steve Bjerklie. Present plans call for making four more of the proportional chamber facilities, and two more SWICS.

All in all, this small group of people has accomplished a lot in the past year.

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NAL CHRISTMAS DANCE

Friday, December 17 -- 7 p.m. to Midnight

Villa Olivia Country Club, Elgin - Tickets $7 per person

Supper....dancing....open bar after 8 p.m.

PORTER BROTHERS TO PLAY CHILDREN'S SHOW

NAL's Porter Brothers will be a part of the program at the Underprivileged Children's Christmas Show at the Bardwell School in Aurora on Sunday, December 19th from 7 - 9:00 p.m. Admission is by donation of a toy.

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YOUR GROUP MEDICAL INSURANCE PAYS!

When you are confined in a hospital, your medical insurance pays semi-private room in full for a maximum of 120 days. Coverage also includes $420 miscellaneous (x-rays, lab fees, medications, etc.). If your claim exceeds the amount paid under basic benefits, you are then covered by the "major medical" benefits of your group insurance. Under major medical, payment is made for 80% of all covered expenses (after a deductible of $100 has been met). For more information call Mildred Meyer, Ext. 396.

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NAL PROTONS LOSE TO KOLLER DODGE

The NAL Protons lost to Koller Dodge Thursday, December 9th in a close game that ended with a score of 69-64.

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CLASSIFIED ADS

FOR SALE- Pair Rossignol Strato Air Skis, all-around fiberglass ski, bought end of last season, used only once, 205 cm; Marker step-in bindings (elastomat heel, simplex dl. heel), poles included, $150 or best offer (skis $165 new, bindings $50). Call Mike Hardy, Ext. 721 or home, 879-2664.

FOR SALE- 7 yr. old, Chestnut Quarter Horse-Mare; Good pleasure & barrel horse; spirited but gentle, well cared for, $300; Call Dottie, Ext. 771.

FOR SALE-5 yr.old Part American Saddle Bred-Gelding, lively but gentle; Exper. rider. $200 or best offer. Call Jenkins, Ext. 521.

FOR SALE- 3½ yr.old- Part American Saddle Bred-Gelding, Exper. Rider, 15½ hands, $300. Call Sam, Ext. 560.

FOR SALE- 8 yr. old Mare, lively for experienced rider. $150 or best offer. Call 879-7716.

FOR SALE- '67 Olds. Cutlass Supreme, 2 door, Hardtop, one owner, Good condition. Best offer. Call Ron Martin, Ext. 457.

FOR SALE- '63 Stationwagon, F85, V8, good transportation. Also Shetland pony and saddle. Call M. Kampikas, TR 9-1712.

FOR SALE- 19" Admiral TV, Black and White portable, good condition. $45. Call Joe Heim, Ext. 382.

FOR SALE-Blue Bedlington Terrier puppies, AKC champ. loving,intel.,excl.disposition.Have all shots,8 wks. old, paper trained. Reasonable 665-3461.

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