

The Village Crier



National Accelerator Laboratory

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PROGRESS ON ACCELERATOR STUDIES - BETWEEN JANUARY 24TH AND 28TH

Modifications have been underway this week to achieve better acceleration based on operating experience. These include operating the quadrupoles and bends on the same power supply system to provide better regulation. Some beam tests were conducted. Beam studies resumed Thursday, January 27th.

MEET THE NAL ACCELERATOR OPERATORS

"The backbone of our operation...they're the reason we've been able to get so much done...they've got to know everything...they're an aggressive and enthusiastic bunch.." and similar laudatory expressions are used by their leaders to describe the daily doings of the 17-man group of Accelerator Operators. Probably the highest compliment of all is the fact that the cry has gone out, "We need more just like them!"

An Accelerator Operator's main job is to tune and control the NAL accelerators from a centralized Main Control Room to ensure continuous and peak performance. He must have a detailed knowledge of the operation, maintenance and repair of the Cockcroft Walton machine, the linear accelerator, the booster synchrotron, the beam transfer system, the main ring synchrotron and many other components -- no small task!

It is almost impossible to find an "experienced" operator for NAL's one-of-a-kind machine. The size of the mammoth machine is matched only by the enormous complexities that can and do arise in its operation. And, as one senior physicist expresses it, "We're all still learning how to tame the beast!" So where does one get experience for such a job?

An Accelerator Operator is, typically, a man around 24 who has had a technical training course or equivalent experience with a heavy emphasis upon electronics. But for every "typical" operator, there are several exceptions, both in training and education. Two of the present operators hold B.S. degrees in physics; another is enrolled at Northern Illinois University carrying a full load. Jim Hogan, the operator's group leader, makes every possible effort to adjust work schedules to accommodate the education plans of his crew.

A new operator learns by sitting at the control panel

(Continued on Page 2)



....Keith Meisner monitoring
Booster parameters....



....Gerry Ortlieb at the
Booster console....

MEET THE ACCELERATOR OPERATORS (CONTINUED FROM PAGE 1)

with an experienced operator; he observes, he asks questions, then tries by himself...pressing buttons and adjusting knobs at the console, watching for the results on the screens above. He must be able to interpret the data displayed on the console and to make continuous decisions for further adjustments. But when he doesn't obtain the results he's after, he's expected to know alternative approaches. And, he is expected to know where to go to correct a malfunction and, in many cases, how to fix it. He not only becomes sensitive to the operating idiosyncrasies of the machines, but becomes versatile in his ability to diagnose a problem and take appropriate action.

The personal qualities of the operators really determine their success. They need to demonstrate intellectual curiosity about everything technical in their path. An operator must have the interest, the confidence, and the drive to make electronic and mechanical systems work as they should. Also, they have a desire to make suggestions to improve the system and follow them through to completion. In short, "energetic dedication" describes the typical operator.

At present, three operators are needed on each of three shifts -- one each on the Linac, the Booster, and the Main Ring consoles. When the system is completed and refined, one person will be able to control the entire installation. To provide a change and to keep the men abreast of development work, they are rotated every five weeks through a "tech area" where they do bench work involving laboratory and systems equipment.

NAL leaders point out to prospective operators that a physics laboratory such as NAL is always pushing the limits of technical knowledge. Equipment is used at NAL that is far ahead of what most industry is using and, as a result, the scope of the knowledge a person can learn in such an environment is almost unlimited. As a result, a well-motivated person working in the operator's group can be given a lot of responsibility and turned loose on a system that will give him a lot of challenge. If he responds to the challenge, he becomes a good operator.

Present Accelerator Operators include: Barry Barnes, Michael Froehlke, Jeff Gannon, Harland Gerzevske, Terry Hendricks, Robert Hively, David Kindelberger, Mark Koenig, Bill Lee, Ewald Macheel, Bob Mau, Keith Meisner, John Nelson, Gerry Ortlieb, Byron Rodewalt, Greg Urban, and Roy Wickenberg.

For the young student or ex-student with a bent for electronics and for being where the action is, the assignment as an NAL Accelerator Operator offers a 21st Century opportunity. Young female electronic wizards would also be welcome for this challenging work.

(Photos in this article were taken by Tony Frelo and Tim Fielding, NAL Photographers.)

NAL Accelerator Operators



...(top to bottom) Jeff Gannon, Greg Urban, Harland Gerzevske, and Terry Hendricks...



...A significant development on the NAL machines draws an audience in the Main Control Room...



... (L to R) Stewart Loken and Paul Kunz, members of Experiment 26 group, working on computer calculations...

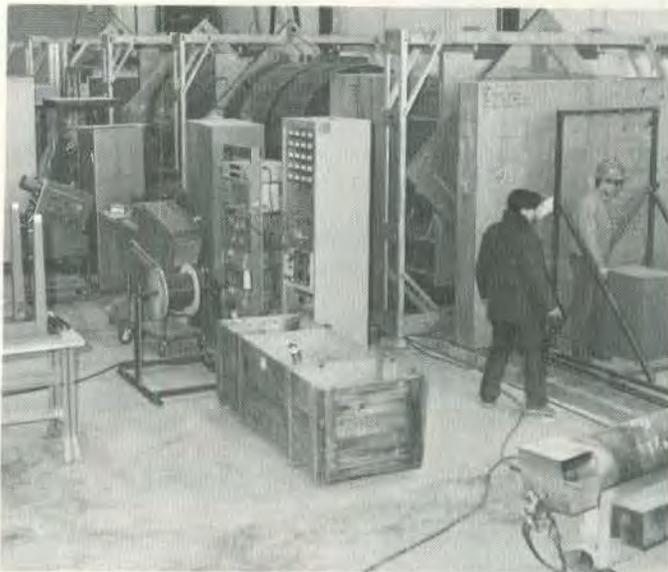
Photos by Tim Fielding, NAL

PHYSICISTS IN EXPERIMENT NO. 26 FIND A NEW HOME

Equipment and apparatus for NAL Experiment No. 26 were moved into the Muon Laboratory in the Neutrino Laboratory area during January. Two main groups of experimenters have been involved in setting up the apparatus since July, 1971. They have previously been working in the Industrial Building #3 in the Receiving Department, awaiting the completion of the Muon Laboratory.

The group from Michigan State University consists of K. Wendell Chen, Don Fox, Paul Kunz, Chuen Chang and David Chapman. The collaborating group from Cornell includes Lou Hand, Stu Loken, Yasushi Watanabe, and Bruce Meyer. Also Mark Strovink, affiliated with both Cornell and Princeton and Wayne Vernon from the University of California at San Diego are participating in this experiment.

Some of these physicists are already familiar faces on site since they have been interacting with NAL staff members frequently during on and off hours for many months. These physicists are interested in using the muon beam which will emerge parallel to the neutrino beam. Their aim is to study the electro magnetic structure of the proton by studying muon scattering.



...Dr. K. Wendell Chen (L) and Yasushi Watanabe checking equipment in the Muon Laboratory...



...Part of the apparatus now being installed in the Muon Laboratory by (L to R) Donald Fox, David Chapman and Dr. Chen...

1972 ILLINOIS HIGHWAY MAPS NOW AVAILABLE

Copies of the 1972 Illinois Highway Maps are available in the NAL Public Information Office. The new map contains a noticeable number of changes in route numbering throughout the state. NAL employees should be aware that the former Route Alternate 30 is now designated as Illinois Route 38. Rt. 38 is now that portion running from Dixon to the intersection of U. S. Routes 12, 20, and 45 (Mannheim Road). The East-West Tollway (formerly numbered 190) is now Illinois 5.

Similar changes in the suburban areas make it advisable to have a copy of the new map in your car.

DOCTOR'S RELEASE MAY BE NECESSARY AFTER ILLNESS

Charles F. Marofske, Personnel Manager, reminds employees that absence in excess of three days due to illness requires an employee to submit a doctor's release to the NAL Medical office, at 24 Sauk in the Village upon return to work. This is very important, Marofske emphasizes, because sick leave cannot be paid until the release has been presented to the Laboratory.

For further information, call Dorothy Poll, Ext. 232.

YOU AND YOUR CREDIT UNION: WATCH OUT FOR THOSE 18% (ANNUAL) CREDIT CHARGES IN YOUR BILLS!

Christmas has passed, and now your bills are here. As you get your bills, examine them very carefully. There are two important numbers shown on each:

- (a) "scheduled payment" (or "amount now due")
- (b) "new balance" (or "current balance").

If you can pay in full the "new balance", then good for you!

If you can pay only part of the new balance, or just the "scheduled payment", then watch out! The firm (gas company, retail store, etc.), will charge you 18% annual interest rate (1½% per month) on the balance.

If you are unable to pay the "new balance" on one or more of your bills, call Ext. 6-3789, or Ralph Wagner at Ext. 324, for a personal loan from YOUR CREDIT UNION. This loan will cost you only 10% annual rate (5/6% per month).

REMEMBER: CREDIT COSTS LESS AT YOUR CREDIT UNION.

CONGRATULATIONS! Frank and Natalie Nezrick welcomed their first child, a daughter, [REDACTED]. Frank is a member of the NAL Neutrino Laboratory group.

MORNING EXERCISE CLASS BEING ORGANIZED

Keep in shape for skiing and summer activities!!! Details on the program will be given at a meeting to be held in the Village Barn on Tuesday, February 8 at 12:30 p.m. Contact J. Dinkel, Ext. 724 or B. Strauss, Ext. 701 for further information.

MARK YOUR CALENDAR...The next movie sponsored by the NAL Film Society will be shown on Sunday, February 20th. Further details to be announced....

CLASSIFIED ADS

Ads should be submitted before noon on Monday, for publication on Thursday, to Public Information, 35 Blackhawk in the Village. Forms for ads are also available in the Cross Gallery from Irene Sweet. The forms may be sent by mail to the above address but must also reach Public Information by Monday noon if they are to appear Thursday. CRIER ads are free!

FOR SALE - '64 Pontiac Safari Wagon, very good cond., \$450; Thompson 15' boat, motor & trailer, 35 HP Evinrude mtr., skis, tow rope, life pres., excel. cond., \$600. Call Bob, 898-8374 after 6:30 p.m.

FOR SALE - '64 Plymouth Val. Wagon, good running cond., cheap transp., \$175. Arnold Swanson, 879-2900, Ext. 296 or 898-7657.

FOR SALE - '69 Bonneville, all extras, \$1,900, will take good pick-up on trade. Karen, Ext. 222, or 896-6877.

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