

The Village Courier

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RF SECTION AIDS BOOSTER IN 1 GeV BEAM TEST

The continuing Booster saga reached new milestones through the early days of February. Following is a progress report written by Radio Frequency staff members under the direction of Quentin Kerns. Said Kerns: "Our work could only be started when Roy Billinge and Helen Edwards and the people in the Booster group and Don Young and the Linac group had generated a 1 GeV beam." The article follows:

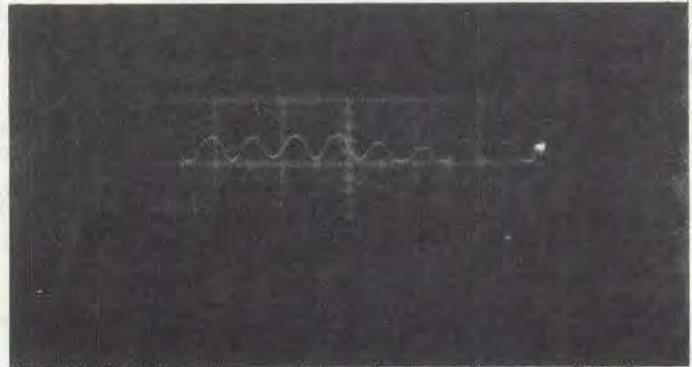
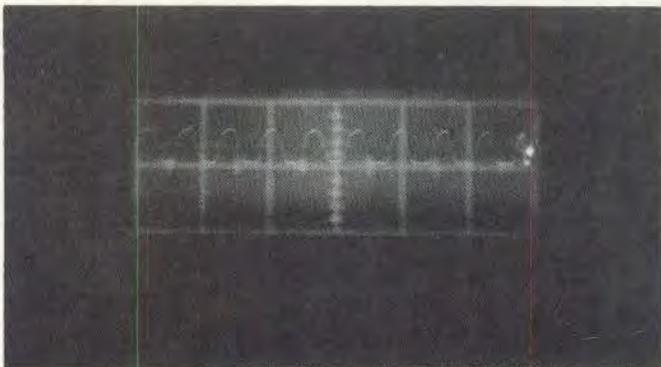
An important test of the Booster RF Accelerating System was successfully passed at 6:00 a.m., Saturday, February 6, when the injected proton beam from the Linac was accelerated to 1 GeV. Six of the eight accelerating cavities in the West Gallery of the Booster were operating to provide a peak rf voltage of about 200 kilovolts per turn to the beam. Members of the RF Section present included Meir Birk, Gerry Tool, Stan Tawzer, Quentin Kerns, Bill Miller, Mike Froehlike, Bob Hively, Lin Winterowd, Mark Augustine, and Fred Sarver.

Earlier that Saturday morning, Bob Ducar, Fritz Macheel, Larry Hepinstall and Ed Higgins had also been present to assist in bringing the system into operation.

In order to track the increasing speed of the protons as they gained energy, the cavities were tuned from a frequency of 30.067 Megahertz (a Megahertz=a million cycles per second) to a frequency of 46.469 Megahertz, keeping in phase with the low-level signal generated under computer control by the Booster.

The principle components that make up an rf accelerating station, and some of the people responsible for their development, are as follows: High Voltage Anode Supply -

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....A full turn of beam in the Booster contains 84 bunches of protons. These are spread out around the circumference of the ring like beads strung on a moving circular string, 500 ft. in diameter. As bunches speed through an RF station on their way around, each bunch generates a pulse which can be displayed on an oscilloscope. The photos above show the scope traces of the beam bunches passing through a cavity recorded during the 1 GeV acceleration.

Photos by Stan Tawzer and Meir Birk, NAL

RF SECTION AIDS BOOSTER IN 1 GeV BEAM TEST (Continued from Page 1)

Stan Tawzer and Fritz Macheel; Booster RF Cavities - Mike May, Burt Sandberg, John Semmelman, Jack Smith, Lee Brown and Dan Douglas; Power Amplifiers and Modulators - Bill Miller, Fred Sarver, John Zuk, and Mark Augustine; Ferrite Bias Supplies - Frank Cilyo, Jim Ziober, and Bob Hively; Curve Generator and Control Equipment - Gerry Tool, Bob Ducar, Meir Birk, Barry Barnes, Al Stump, K.C. Cahill; Control Equipment Computer Programming - Larry Hepinstall and Lin Winterowd and Phase Detectors - Ed Higgins and Mike Froehlke.

Hundreds of pages of specifications and proposals, and innumerable calls and trip arrangements were skillfully handled during the planning stages by RF secretaries Susan Misek and Ellen Dawson. It was the combined efforts of the entire RF Section that was responsible for the success of the 1 GeV acceleration.

It was not possible to go all the way to 8 GeV at this time because rf cavities are not yet in operation in the East Gallery of the Booster. The test program was suspended after this initial acceleration in order to continue work on changing over to the permanent power system.

While this milestone event was in progress at the Booster site, another significant step was achieved in the RF Laboratory Building in the Village. Jim Griffin and Terry Hendricks, together with GE engineers John Hickey and Rudy Dehn, were successfully operating the second Main Accelerator prototype RF Cavity at better than design target specifications. Sustained high power runs were made at 240KV gap voltage at 70% duty cycle. A new loop coupling design perfected by Griffin was largely responsible for the success of these tests.

(A report on recent Booster Section activities will be published in a forthcoming issue of The Crier.)

IS THERE A PICASSO, VAN GOGH OR GEORGIA O'KEEFFE AROUND?

NAL's third annual Art Show will be held during the week of April 26th. Mrs. Dorothy Poll, Personnel, is assisting in arrangements and asks that NAL, DUSAF and AEC employees plan their entries as soon as possible. The Laboratory will provide insurance for all works on display at the show. Work in all media is welcome. In addition to paintings, handcrafts, sculpture, hobby displays and photographic works also are invited for the 1971 show. To reserve space or for further information, call Mrs. Poll at Ext. 232.

CANDLELIGHT BOWL TO BE HELD FEB. 27

There are still a few more reservations available for the Candlelight Bowl to be held Saturday, Feb. 27, at the Bowling Green Lanes, West Chicago. Prizes will be awarded during the evening. The price per couple is \$5.00. About 125 persons are expected to attend. For reservations, call members of the NAL Social Committee.

URA-NAL FELLOWSHIP DEADLINE NEARS

REMINDER: The deadline for applications for the 1971 URA fellowship program is MONDAY, MARCH 1. Fellowships provide up to \$1,200 toward tuition and fixed fees for sons and daughters of URA-NAL employees; they are renewable on an academic calendar basis for four years. If you have any questions, contact Personnel, Ext. 225.

OPEN "FOOTPRINT" AREA FIRST AID STATION

A second nurse has joined the First Aid staff of the Personnel section at NAL. On Monday, February 22, she formally will open an Emergency First Aid trailer in the "foot-print area" at the Main Site. The trailer will be located adjacent to the Beam Transfer hall (on the "court" side, next to the Central Laboratory Phase I excavation).



...Glenys Smith at Main Site medicine chest....

The nurse is Miss Glenys C. Smith, of Wheaton. She has been a member of the NAL staff for several months with offices in the First Aid house in the Village.

Miss Smith's hours at the new Main Site first aid center will be as follows:

1. Mondays, Wednesdays and Thursdays: 11:30 a.m. to 8:00 p.m.
2. Tuesdays and Fridays: 8:30 a.m. to 5:00 p.m.

Her telephone number at the Main Site will be NAL Ext. 386. Miss Smith will be on hand to render first aid services only. Mrs. Dorothy Poll, also a Registered Nurse, will continue to be stationed in the NAL Village, where more complete facilities are maintained. Dr. Robert A. Cornell, of Wheaton, will continue physical examinations of employees at the Village First Aid house

on Tuesdays and Fridays. It is anticipated that both Mrs. Poll and Miss Smith will be on duty at the health center in the Central Laboratory building when it is completed.

The daughter of missionary parents, Miss Smith took her nurse's training in New Zealand, her homeland from the time she was 17. Born in Chile, where she lived until she was four, Miss Smith also has attended school in Canada, Bolivia, Argentina and California. She speaks Spanish as well as English.

About two and one-half years ago, Miss Smith joined the emergency room staff at the Central DuPage Hospital in Winfield. Her brother and sister-in-law reside in the west suburban area.

Observes Miss Smith: "I really enjoy working with the people at NAL."



...First Aid trailer stands at one end of Transfer Gallery at Main Site. Rich Janes, of Booster Section, holds door open for Miss Smith....

EXERCISE ROOM IS AVAILABLE IN NAL VILLAGE

With the cold weather outdoors hampering physical exercise, Charles Marofske, NAL Personnel Manager, points out that the Sauk Circle Exercise Room in the NAL Village is available now for employees during non-working hours. For the key to the room, see Bev Braun at 21 Sauk. The following equipment is available: 110 lb. barbells (2 sets); 3 lb. and 5 lb. dumbbells; 2 striking bags, mounted (gloves provided); training bag (70 lbs.); medicine balls, (6 lb. and 12 lb.); exercise rack; reducing machine; chest pulls; hand grips (4 pair); head strap neck developers (2 sets); and skip ropes (2).

YOUR PAYCHECK IN 1971: FICA, FED. WITH.

Charles Marofske, NAL Personnel Manager, points out the following changes in federal Social Security and Income Tax regulations:

Social Security - The contribution rate for calendar year 1971 has increased from 4.8% to 5.2% of \$7800. Effectively, this increases the maximum yearly Social Security deduction from \$374.40 to \$405.60 or \$31.20 more. The amount paid into your account is matched by an equal payment from the Laboratory.

Federal Income Taxes - The federal withholding tax tables have been revised to reflect the following change brought about by the 1969 Tax Reform Act:

1. Dependency exemption is increased from \$625 to \$650 for 1971;
2. The Standard Deduction which was formerly 10% of adjusted gross income, limited to a maximum of \$1,000, is increased to 13% with a maximum deduction of \$1500;
3. Tax rates for Single Individuals and Heads of Households are reduced. Single Individuals, with the same taxable income as a married couple, formerly paid as much as 40% higher taxes. The revised tax tables reduce the maximum difference to 20%. The impact of these changes on your net take home pay is demonstrated with the following examples:
 - A. A single individual with only one exemption and a weekly salary of \$150 (in both 1970 and 1971) will pay additional Social Security of 60¢ and there will be a reduction of \$2.19 in the amount of Federal Tax withheld. There is a net weekly take home increase of \$1.59.
 - B. A married person with a total of four exemptions and a monthly salary of \$1,000, will pay additional Social Security of \$4.00 per month (until he reaches the maximum deduction - \$7,800) and there will be a reduction of \$6.04 in the amount of Federal Taxes withheld. There is a net monthly take home increase of \$2.04.

NAL "GREEN THUMBERS" TO MEET

A meeting of NAL's "serious gardeners" will be held Monday, Feb. 22, at 12:30 p.m. in NAL's Cafeteria. Tables will be reserved for lunch. At the meeting, the group will organize and decide the direction of their gardening efforts on the NAL site. Please pass the word along to other employee-gardeners interested in such matters as plant starts, organic gardening, watering problems, weed control, etc. Contact Anne Burwell, Ext. 457, or 231-4103, if you have any questions or plan to attend the meeting.

CLASSIFIED ADS

FOR SALE - RCA color T.V. console, floor model, 23" screen, Med. style cabinet, 48" cabinet. Beautiful furniture and reception. Best offer. 35 MM Yashica model EE135 camera. Auto. electric eye, synchronized timer. Brand new professional camera. Best offer. Imperial accordion, built-in pick-up on bass and treble keyboards. 14 treble stops and 5 bass stops. Built-in chamber tone. Best offer. Contact S. LaMantia, Linac, 879-7580.

FOR SALE - '68 Karman-Ghia convt., blue, Recently overhauled engine & trans., with radio. \$1,100. Call, Ext. 246.

FOR SALE - Male, 1 yr. old AKC Airdale. Looking for a good home with lots of room to run and children. Call C. Montela at 232-4629.

WANTED - 2 burner gas plate. Call D. Johnson, Ext. 394.

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