

December 13, 1984

FERMI NATIONAL ACCELERATOR LABORATORY

FermiNews

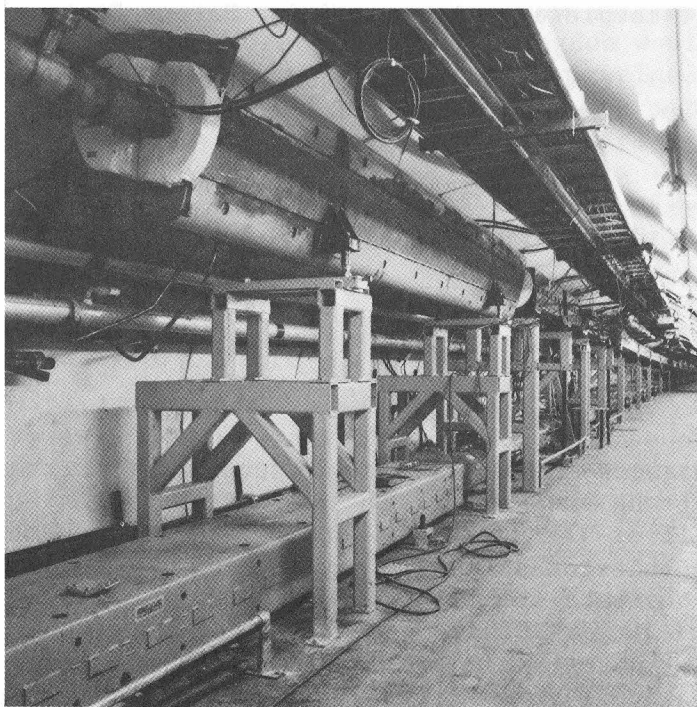
NEW ACCELERATOR IMPROVEMENTS OUTLINED

During the last three months the accelerator was in a maintenance and improvement mode. Some of the jobs that were undertaken are as follows:

1. Half of all the Energy Saver dipole magnets were opened up, and improved lead restraints were installed. In order to get at the magnet ends to install the lead restraints, 25% of the Saver magnets had to be moved into the tunnel aisles. Once in the aisles, the repair teams could open the ends of the magnets in the aisles, as well as one of the ends of each of the remaining magnets.

2. The Main-Ring control system was removed from the Xerox 530 system and moved to the Accelerator Division operational VAX, which required modification of 50 to 60 applications programs.

3. The Main-Ring magnets in the D0 area were moved up 6 feet above the Energy Saver to create the D0 bypass.



The new D0 bypass.

4. Five of the concrete hoops that formed the Main-Ring tunnel in the F18 area were removed and replaced by new, larger tunnel sections. This was done to install

the new extraction and injection lines from the Main Ring/Saver to the Debuncher/Accumulator rings. To remove these tunnel sections required removing cable tray, water pipes, magnet bus work, tunnel lights and electrical conduit.

5. The RF Building was enlarged to make room for cryogenics, more rf stations, and kicker power supplies. The Main-Ring radio-frequency low-level rf system (Main-Ring LLRF) was partially dismantled and moved several feet and then reconnected.

6. The berm around the Booster tunnel was removed and the tunnel was uncovered in the long straight section 3 area. A concrete saw was used to cut a section out of the tunnel and a new beam line was installed between the Booster and the Accumulator ring.

7. In the Switchyard, new magnets and power supplies were installed to prepare for fast extraction.

8. New trim magnets for antiproton extraction were installed, as were new extraction kickers, several special trims, collimators, and new beam valves.

9. New rf cavities for the Saver were installed.

10. The electronics for the entire Main-Ring beam position-monitoring system was replaced.

11. There were, of course, hundreds of hours spent on standard maintenance.

12. All 24 200-hp Main-Ring LCW water pumps were replaced with new 50-hp LCW pumps, and flow restrictors were added (this was done because the Main Ring's heat load is much less now that it runs at 150 GeV). The new pumps are more energy efficient and are easier to maintain. For the first time in ten years, the entire Main-Ring water system was drained, and the accelerator is effectively starting up with a new water system.

(cont'd. on pg. 4)

IF I WERE DIRECTOR, THE FIRST THING I WOULD CHANGE . . .



Since this is the only issue of **Ferminews** before the holidays, the **Ferminews** staff thought of sending a roving reporter around the site to ask each and everyone of you what you wanted for Christmas, but realizing that Santa's list has already been prepared based upon conduct, we decided to ask each of you (but not everyone) a question that might pique your imagination and fantasies just as much as a visit from Santa. Thus the reporter's question, "If you were appointed **Laboratory Director for a day**, what is the first thing you would change?" The replies were numerous and varied, and we print the printable ones here.

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Move the Lab to Tahiti, or deep right of Wrigley Field.

Harlan Dick, Accelerator Division

Cancel the high-energy physics program. The Laboratory exists to keep the local construction industry alive, right?

Elvin Harms, Accelerator Operations

1) Eliminate **Ferminews** and all people associated with it; 2) Declare open season for goose-hunting using baseball bats; 3) Clear cut lumber the atrium; 4) Think up a whimsical name for a new particle; 5) Initiate a study on why the temperature in my office can't be made comfortable; 6) Eliminate GSA toilet paper from the rest-rooms.

W. Merz, E/E Support

Teach the geese to use portapotties.
John Kowalski, Technical Support Section

1) I'd put the Director's Office on the 15th floor of Wilson Hall...that would keep the elevators all in working order; 2) I'd keep Eola Road entrance open 7 a.m. to 7 p.m. 3) I'd remove the ominous "US GOVERNMENT PROPERTY...SPEED RADAR ENFORCED" sign from the Pine Street entrance. How Tacky!! 4) Have an annual auction of obsolete equipment.

Anonymous, Accelerator Operator

Since the Lab is run like a circus, I would incorporate rides and games to make it complete.

K.H., Safety Section

If I were appointed Director for the day, the first thing I would do is have a Lab-wide party to celebrate! Next I would get plans started for a golf course on site. What great water holes and rough we would have, not to mention the animals on the course.

Carolyn Longland, Purchasing

1) Change the Main Ring shape from round to square. Reason: put the weaker magnets in the straight sections and the strong magnets in the corners; 2) Cover all of the roads on Fermilab property with cobblestones (large ones) to encourage motorists to use the bike path more often; 3) Modify Einstein's theory of relativity to include the leftovers from the chili bake-off contest; 4) Fill in the duck pond to make a heliport for those of us that fly to work; 5) Give away an all expense paid vacation to Eola, Illinois, to the winner of the "Dick Lundy Look Alike Contest" 6) Serve roast pigeon next at Chez Leon.

Les Wahl, Linac

If I was appointed Director, the first and only thing I would change is my salary! (and fry up some of those ducks!!)

David Cathey, Safety Section

I'd like to make Fermilab more fun. I'd spend my day riding around in one of those Security patrol cars with the sirens on, or maybe one of those big yellow fire trucks. I'd have some of that helium used for balloons, and I'd pipe it into the seminar rooms so the speakers sounded like Donald Duck. I'd order the accelerator immediately dismantled and the tunnel cleared so we could ride around in those neat little golf carts and have go-cart races and real wild goose chases. Think of the whopping big model railroad we could put in that tunnel! I'd have an atrium party every day and I'd require that all secretaries dress up as rodeo cowgirls and my senior staff and SAG members would have to dress up like the Shriners. I'd even hire twice as many theorists and astro-physicists!

C. H., Theoretical Physics

I would build a White Castle on site.

Mike Utes, Accelerator Operations

Allow vehicular duckacide.

Tom Regan, Physics Department

If I were appointed Fermilab Director for a day, the subjects in my kingdom would be able to enjoy the following proclamations: First and foremost that all subjects shall receive and enjoy the days off between Christmas Eve and New Year's Day. The kingdom of Fermilab will be shut down for the pleasure of all subjects--subjects will receive one day of freedom not subject to leave of any kind for each year worked without using sick leave. This day will be called incentive day and accrue by year, i.e., two days for two years, two weeks for ten years. If I were King (oops!) Lab Director for longer, my subjects would be the benefactors of many more morale uplifters.

D. L. Bart, Director's Office

Prohibit cigarette smoking in all work areas, the cafeteria, meeting rooms, and the auditorium. Smoking could be done only in designated smoking rooms, to be located on odd-numbered floors. No work could be done in these rooms. They would be poorly ventilated and furnished with heavy drapes and upholstered furniture to retain the aroma smokers seem to enjoy.

Dave Carey, Experimental Areas

I would repaint the service buildings around the ring so there would be only one color scheme!

An Accelerator Operator

Replace that unsightly pile of rocks on Pine Street with a sculpture of Leon's chicken.

Bonnie Deke, Neutron Therapy Facility

I would get rid of those orange and blue houses in the Village and replace them with an 18-hole golf course surrounding the Users Center.

Michelle Gleason, Neutron Therapy Facility

The first thing I would change--as Director--is the parking situation at Fermilab. By instituting valet parking (perhaps using Security to park cars instead of issuing parking tickets) people could do what they're paid for instead of spending endless time looking for a legal parking spot--even when you're on time for work!

E.C., Accelerator Division

Paint the white walls in the Wilson Hall offices various pastel colors, and issue assigned parking places.

J. P. Morgan, Purchasing

I would bleach my hair, and look the part.

Mark Mills, E/E Support

Appoint Mike Royko Head of the Theory Group.

Gene Fisk, Technical Support Section

PLAYGROUP SEEKS NEW MEMBERS

A new session of the Fermilab Playgroup will begin on Monday, January 7. As always, new members are welcome! Playgroup is a parent-child cooperative and is available for children of all Fermilab employees and visitors. Parents with children 18 months to 4 years are invited to stop by at 28 Shabbona (next to the Day Care Center) on Mondays, Wednesdays, or Fridays from 8:45 a.m. to 11:30 a.m. Call Valerie Liston at 393-9079 for more information.

NALREC TO HOST CHILDREN'S PARTY

NALREC is holding its annual Children's Christmas Party on Sunday, December 16, from 2 p.m. to 5 p.m. Children under the age of 8 will enjoy refreshments, a special visit by Santa Claus, and cartoons courtesy of the Film Society. For information call John Satti, ext. 3088.

BEAM ACCELERATED THROUGH D0 BYPASS FOR FIRST TIME

(cont'd. from pg. 1)

Since the middle of November, the accelerator has been in the process of start-up, at first only on weekends; in the last week or so it has been around-the-clock operation five days a week. What goes into a start-up of our complex series of accelerators? To answer this, let's pick one portion of the accelerator, for example the Main Ring.

The Main-Ring vacuum system has to be put back and made leak tight, the correction magnets located on the quadrupole beds must be put back (many get removed during long shut downs). A gaussmeter is used to check polarity on every horizontal and vertical dipole, sextupole, quad, skew quad, and octupole correction magnet. All 1000 Main-Ring magnets have their inductances checked to make sure that there are no turn-to-turn shorts. The Main-Ring magnets are black-listed (resistance-to-ground is checked). All the radiation loss monitors are checked and calibrated. An extensive two-to-three week power supply checkout is made. This year an extensive check of the applications programs was made to ensure that they were all converted properly. Several weeks of checkouts for the rf system are made. Radiation safety system checks are made. Abort systems and injection lines are tested. Four to five walking tours of the entire Main-Ring tunnel are made to ensure nothing has been overlooked. This year required extensive testing of the new Main-Ring beam-position system, and checkout and testing of new power-supply systems for the D0 bypass magnets were made.

Maintenance and start-up are truly a laboratory-wide effort. Any errors made during shutdown or oversight during start-up can easily add weeks to the time needed to resume stable high-energy physics.

So, how are things going? We have accelerated beam in the Main Ring (this means through the D0 bypass). So far about 70 hours of tuning have occurred, but more work is needed to improve the over-all efficiency; the new water system is up and working; the new Main-Ring beam-position detector system works; the Booster appears fairly healthy; the entire Saver is cold and has been ramped to 800 GeV; the Main-Ring control system appears to work and is continuing to be checked out, and as we write this, we are attempting to inject beam into the Saver for the first time since the shutdown.

Blood Drive Next Week

The Aurora Area Blood Bank Drive will be held on Tuesday, December 18, from 9 a.m. to 2 p.m. in Wilson Hall Conference Room 1W. For more information, contact the Medical Office, ext. 3232.

LAB HOLIDAY SCHEDULE ANNOUNCED

The Laboratory paid holiday schedule for the rest of the year is as follows: Monday, December 24 (half day); Tuesday, December 25; Monday, December 31 (half day); and Tuesday, January 1, 1985.

The Laboratory will close for a full day on both December 24 and 31. Employees must decide whether to use vacation time or their floating holiday to cover the normal four hours scheduled work on each of those two days. The alternative would be leave without pay which must have supervisor approval.

During any hours that the Laboratory is technically closed, there are always security, safety, and other projects that must be attended. Consequently, some employees may be required to work on the half-day shut downs. These requirements will be identified by divisions and sections. The hours of work during the half day shut downs, if required, are regular time for payroll computation.

Timesheets and leave usage sheets should be filled out as 1/2 day vacation **or** 1/2 day FLH **or** 1/2 day LWOP - and 1/2 day H for the 24 and 31 of December. Monthly leave usage sheets are due in Payroll by 11 a.m. tomorrow, and the weekly schedule for submitting timesheets is as follows:

<u>Week Ending</u>	<u>Date due in Payroll</u>	<u>Time due in Payroll</u>
12/23/84	12/20/84	11 a.m.
12/30/84	12/27/84	11 a.m.

FOR SALE:

AUTOS:

1980 FORD F150 RANGER FULL-SIZED PICKUP. Gold/maroon w/white fiberglass cap w/slide window, 302 V8 engine, manual 3-spd. w/overdrive transmission, P/S, P/B, A/C, full instrum. pkg., AM radio, LED clock, security lock pkg., tinted glass, slide rear window, dual gas tanks, and Ziebart rustproofing; \$5900. Call Bob Vanecek, ext. 4468 or 879-8957 evenings.

1978 CAMARO. A/T, P/S, P/B, cassette stereo, inline 6 cyl., new shocks, tune up, 63,000 mi., approx. 20 m.p.g.; \$2,600. Call Todd, ext. 3558 or 879-3471 evenings.

1978 PONTIAC GRAND LE MANS SAFARI 4-DR. WAGON. V6, A/T, P/S, P/B, A/C, cruise, AM/FM stereo w/cassette, lug. rack, 91,000 mi., very good cond.; \$2995. Call Rich, ext. 3868 or 690-1691.

1978 VW SCIROCCO. 4-speed with A/C; \$1700. Call Greg, ext. 3727 or 879-0179.

MISC:

(2) YAMAHA SNOWMOBILES. 1-cyl. and trailer. Call Ed Drucek, 879-3227 after 6 p.m.

1979 DODGE OMNI 024 PARTS. Tires, doors, windows, block, fwd. trans., battery, carb., etc., make offer. Call Todd, ext. 4398 or 4617, or 851-9234 after 4 p.m.

VIDEO EQUIPMENT. Port. VHS recorder and color camera, 5 yrs. old, incl. professional tripod, excel. cond. Call Steve Dochwat, ext. 4389 or 695-2643.

LOWREY ORGAN. Foot pedal base, double keyboard, 17 stops, 40-in. wide, 24-in deep, needs some repair, \$75. Call Dwaine Johnson, ext. 4921.

CONTEMPORARY DINING ROOM SET. Table w/2 leaves and pads, 4 chairs, tea cart, and hutch, excellent cond., \$700; Call Ruth, ext. 3281 or 355-0162 after 3 p.m.

HAND-SIGNED COLOR SERIGRAPH BY JOHN WEST. #Li/CXXV, entitled "Slapshot," 38 in. x 32 in., incl. frame and blue matting, \$125. Call Barbara afternoons, ext. 3865.

LADIES NORDICA SKI BOOTS. Size 7 narrow, good cond. \$20. Call Carolyn, ext. 3315.

For the following items call 584-2154: Smith-Corona manual port. typewriter, good cond., \$25; 4 white spoke rims, 5 lug, for Chevy, \$40.

MISC:
(cont.)

For the following items, call Rene, ext. 3278. 2 pairs wooden x-country skis w/bindings, 170 and 195 cm, \$10 a pair; 1 pair fiberglass waxless x-country skis, 190 cm, \$30; 1 set short bamboo x-country poles, \$5; 1 set tall aluminum poles, \$10; Singer Style-Mate Model 348 Zig-Zag sewing machine, two-drawer pine cabinet, knee control, two-needle stitching, uses discs for zig-zag, top, shell, embroidery, and monogram stitching, has had regular maintenance, in excellent condition, \$250; Pimsleur "Speak and Read Essential Spanish" cassettes, 15 cassettes, 30 lessons, finest tapes available for speaking Spanish using a 200-word vocabulary, \$300 new will accept \$150 or offer.

For the following items call Curtis, ext. 4454. Sears Kenmore Mini- Refrigerator/Freezer, 34-in. high, 18-1/2 in. wide, 20-in. deep, 1-1/2 years old, good cond., \$175; 1970 Yamaha FG180 steel-string flat-top guitar (w/o case), \$75.

For the following items call Mark, ext. 4776 or 695-3263. gutter heaters, 2 ea., 40 ft (360 watt), 60 ft (480 watt), \$40; roofing brackets, 2x6 and 2x4, 12 total, \$20; American Flyer Train: engine #336, freight cars, track, bridge, crossing, \$100; man's blue Linde star sapphire ring in white-gold mounting, \$75.

STEREO EQUIPMENT. For the following items call Tom Fitzpatrick, ext. 3230. TEAC V-909RX cassette deck, Dolby b&c, dbx, auto-rev., remote, much more, \$375; Acoustic Research remote control for any stereo system, \$95; Harmon Kardon CD401 cassette deck, Dolby b, c, hx pro, 3 heads, brand new in box, \$479; Audio Source EQ1, spectrum analyzer/EQ, brand new in box, \$249; Maxell UDXL II-S cassette tapes, \$22.90/case of 10 after rebate.

BABY PARAKEETS. Some mated pairs, died and normal colors, some half English, \$10-\$15 each. Call 393-3357.

7 BEAUTIFUL PUPS. Huskie mix, will be 6 wks. old and ready to go by Xmas, \$10 each. Call Roy, ext. 3144 after Dec. 16.

WANTED:

HOUSING. For grad student, wife, and sm. child, reasonable rent., arriv. Feb. 1, 1985. Call Housing Office, ext. 3777.

VIOLIN. Call Paul Mantsch, ext. 4949.

DOWN HILL SKIS. 180, 185, or 190s. Call Keith Wiersma, ext. 3363 or 3467.

PHYSICS TUTORS FOR HIGH SCHOOL STUDENTS. Wednesday evenings for small group. Contact Simmie Meredith, ext. 4938.

RIDE TO AND FROM FERMILAB AND ROMEOVILLE. 7 a.m. to 3:30 p.m. Call Anne Zimmerman, ext. 4326.