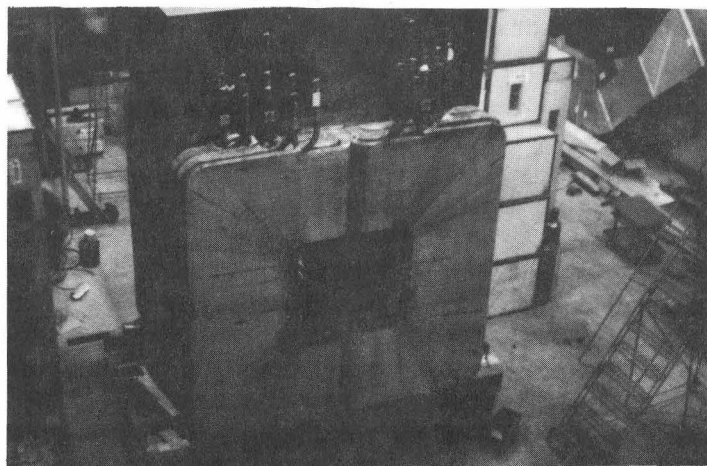


First Beam Tests at Wide Band Lab Successful

by Mark Bodnarczuk

On Sunday, June 23, a 400 GeV electron beam was transported to the new Wide Band Experimental Hall. This milestone was preceded by five years of planning and design, and a year of intense construction as part of the TeV II upgrade in the Proton Area.



Installation of E-687's apparatus in the new Wide Band Experimental Hall.

The Proton Area receives three proton beams from the Tevatron: Proton West, Center, and East. Before the advent of the new Wide Band Beam, the Proton East beam was directed to either the Tagged Photon Lab, or the old Broad Band Lab, but they could not run at the same time. Experimenters at Tagged Photon and Broad Band would alternate running times. Because of this limitation, only three experiments could run simultaneously in the Proton Area. The new Wide Band Beam allows four Proton Area experiments to run at the same time. Although they still share the same proton beam further upstream, the beam is now split in two with electrostatic septa and directed to both Labs simultaneously.

The new Wide Band Beamline is designed to turn protons into photons; not an easy task. Using various targets and beamline elements, the proton beam from the Tevatron is first converted into a beam of electrons. The electrons are then transported downstream to a piece of lead called a photon radiator. As they penetrate the

metal, they get deflected producing photons with a wide range, wide band, of energies. Hence the name Wide Band Photon Beam. The electrons are swept away from the beamline into a dump and photons continue downstream to the experimental detectors. There are two experiments currently approved to run in the beamline: E-687 and E-683. The apparatus for E-687 is currently being installed in the Hall.

But what will E-687 do with these photons once they reach the detectors? In the technical jargon of high-energy physics "They are going to look at photoproduction of charmed and bottom mesons and baryons." Let's define that. We start with quarks. There are six of them: up, down, charmed, strange, top, and bottom. Each quark has an opposite partner called an anti-quark. The particles that E-687 is particularly interested in, charm and bottom mesons and baryons, are made up of different combinations of these quarks. Baryons contain three quarks, and mesons contain a quark and an anti-quark; a proton is a baryon. A bottom meson contains two quarks one of which is a bottom quark. A charmed baryon contains three quarks with one or more of them being a charmed quark. Photoproduction describes a special process by which these rare particles are produced with a beam of photons. E-687 will use the photon beam to study how these rare particles are made and how they behave once created. They will also search for new and more exotic particles.

After over five years of planning, design, and construction, the first electrons have arrived at the new Wide Band Hall, and high-energy physics data is on the way. E-687 and E-683 are the first two experiments to use the new facility, but the Wide Band's unique and versatile design will provide photon beams for other Tevatron experiments interested in studying photoproduction of rare particles.



The Fermilab Fire Department is Ready for Any Emergency



Pictured are two components of the Fire Department hydraulic rescue tools. Kevin Murphy, left, holds the shear unit used to cut items such as auto doors and corner posts. Jack Steinhoff, right, holds the spreader unit used to force doors, seats, and fire walls. The gasoline powered hydraulic pump unit in the foreground supplies as much as 15,000 lbs of operating force to the jaws of the rescue tools.

One of 17 in-house fire departments at national laboratories, the Fermilab Fire Department faces a unique challenge. A well thought-out fire protection system is needed for each of a wide variety of risks, including industrial, research, residential, and high-rise. Special techniques are required for preventing and, if necessary, combating fires in such unusual environments as the Main-Ring tunnel, service buildings, and experimental halls.

Last year, the Fermilab Fire Department made a total of 582 runs. Of those, 409 were automatic alarms transmitted to the dispatcher by the computerized FIRUS alarm system. Of this total, 38 resulted in actual fire incidents and loss. Medical emergencies requiring response by the Fire Department ambulance totaled 173. The department also responded to nine requests for assistance from fire departments in neighboring communities.

Fermilab has mutual aid contracts with six area fire departments: Aurora, North Aurora, Batavia, Marywood, Warrenville, and West Chicago. These mutual aid agreements enable the Laboratory to have access to

additional manpower and specialized apparatus, such as aerial devices, in the event of a major fire at the Laboratory. In return, the six communities know they can count on our department for extra assistance when they need it. For instance, the Fermilab and Batavia departments have responded to a number of high-speed accidents on Kirk Road. Our rescue truck and its Hurst hydraulic extrication tools provided welcome assistance when victims were trapped in their vehicles. These tools will force or cut their way into a vehicle or industrial accident, permitting rescue with the least possible movement of the trapped victim.

When a fire call does come in, Fermilab's fire fighters have the right equipment for any emergency. We have three first-line pumper trucks capable of pumping a combined total of 4000 gallons of water per minute. Our truck is also equipped with spare self-contained breathing equipment for use in handling problems such as an oxygen deficiency incident in the experimental areas. Instrumentation is carried to detect flammable gases, radiation levels, and oxygen levels. The unit is also equipped for handling photography requirements when the Laboratory photographer is unavailable. An onboard generator system can provide emergency lighting or specialized power needs such as the emergency radiation counting equipment at 14 Shabonna.

An additional vehicle, recently added to the department, is a Spill Control Trailer. This unit is stocked with a variety of tools and equipment needed to control chemical spills that otherwise might cause environmental pollution. An example of its usefulness occurred on January 24, 1985, at 10 p.m., when a high-voltage transformer exploded in the enclosed yard of the Master Sub station. The Fire Department was able to provide assistance to personnel from Facilities Operation and Engineering in controlling a potential spill of 15,000 gallons of cooling oil from the main body of the transformer.

The Fire Department's modular ambulance is staffed by department personnel,

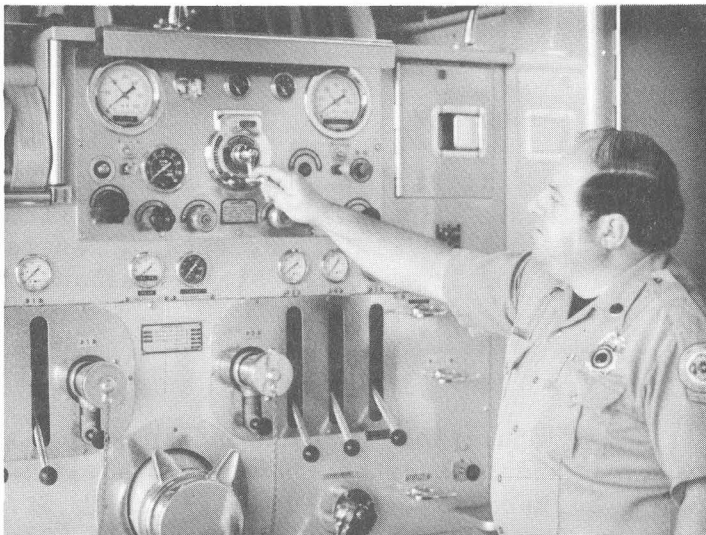
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"Fire Department"...cont'd from pg. 2

all certified by the State of Illinois as Emergency Medical Technicians. A four-wheel drive truck for brush fires and a boat for water incidents complete the equipment list.

The various performance levels in the fire service are certified by the State of Illinois. Each require a certain level of study and written examination. All department members are certified fire fighters. In addition, we have three inspectors and 15 instructors, with various instruction specialties. A number of members hold Fire Science degrees, and Lt. Bill Beckley just completed a Masters Degree in Industry and Technology.

Deputy Chief Ron Grosklaus and Captain Fred Cload review Laboratory building plans to insure they comply with fire suppression and alarm requirements, as well as life safety codes. Captain Cload, as the



Lt. George Reichhardt reviews some of the controls on the pump panel of Engine 722 while preparing to give a class on hydraulics. This diesel powered engine will pump 1500 gallons of water per minute. Modern fire apparatus can be expensive. A new engine of this type would cost \$130,000.

department's fire protection officer, also supervises the welding permit system and instructs welders in fire safety. He also instructs and qualifies Laboratory personnel who must use self-contained breathing equipment and assist the fire department in the event of an oxygen deficiency incident in their area of the Laboratory.

Adela Auskalnis, the department secretary, maintains department records and

types incident reports and business letters, as well as performing a variety of office functions that keep the department running smoothly and on schedule.

On behalf of the Fermilab Fire Department, I'd like to extend an invitation to stop and visit us any time. However, you can't pet our fire dog, or slide down our fire pole, as we lack both of these items.

**—Chief Ralph Kramp,
Fermilab Fire Department**

Housing Reminder

July 19, 1985 is the deadline for receipt of reservations for fall on-site housing. Responses will be mailed out August 9, 1985. Starting dates for fall occupancy will begin during the first week of September, 1985. For information, please call the Housing Office, ext. 3777.

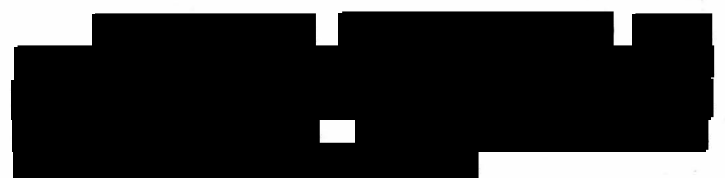
New Gate Helps Control Railhead Access

To more effectively monitor the flow of material and equipment in and out of the Railhead storage area, a new gate has been installed on the Railhead road north of Casey's Pond. For access to the storage area, it will now be necessary to follow the instructions as posted.

The gate is lighted; a restricted, on-site-only telephone for entrance requests has been installed. Questions concerning access and storage may be directed to Fred Assell or his staff in Support Services at ext. 3577.



Congratulations To ...





Bowling...

Monday Night Bowling League: the night of May 20 was tense at the Warrenville Bowl - only one point separated the first and second place teams. In an exciting roll-off, the *Channel Cats* were victorious over *Gary's Gang*. Bowling for the *Channel Cats* were Joyce, Ron, and Cindy Dieter, and Helen and Mac McCulloch. Members of *Gary's Gang* are Jackie Coleman, Gary Smith, Curt Owen, Junior Jones, and Jack Jagger.

Rounding out the Monday night standings were: third place, *Double Trouble*; fourth place (TIE), *215 Club/Double Trouble*; sixth place, *Filthy Five*; seventh place, *Bar Room Barf*; eighth place, *Hammers*; ninth place, *Better Five*; tenth place, *Roy's Girls*; eleventh place, *Turtles*; and twelfth place, *KLUG*.

Most Improved Female Bowler was Pat Sanchez, while the accolade for Most Improved Male Bowler was split 3 ways by Walter Lufmann, Gerry Dyche, and Keith Dillow.

New Officers for 1985/86 season are: President, Junior Jones; Vice President, Curt Owen; Secretary, Marti Bennett; Treasurer, Peggy McAuliff; and Sgt. At-Arms, Jackie Coleman.

Swimming Pool Reminder ...

The Fermilab swimming pool is open for the 1985 season. Pool membership is available to Fermilab employees, visiting researchers, employees of DOE at Fermilab, Great Lakes Security personnel at Fermilab, and families and accompanied, paid guests of all the above.

Season rates are \$20 for a single, \$35 per couple, and \$50 for a family membership. Daily charge for swimming is \$2.

Standings for the Wednesday Night Mixed League: first place, *Sangre Nuevo*, Sherry Hickey, Junior Jones, Mike Behnke, Ron Wagner, and Chuck Taylor. Second place, *Alley-Gators*; third place, *One More Time*; fourth place, *Wanderers*; fifth place, *Jellosnorflers*; sixth place, *Split Kickers*; seventh place, *Slow Starters*; and in eighth place, *Unknowns*.

Most Improved Female Bowler was Donna Criner, Most Improved Male Bowler was Walter Lufmann.

New Officers for 1985/86 Wednesday Night season: President, Dale Miller; Vice President, Ed LaVallie; Secretary, Angie Velasquez; and Treasurer, Nancy Shanahan.

Golf...

Congratulations to Andrew Feldman, a Harvard undergraduate student working on CDF, who knocked off a hole-in-one at St. Andrews Country Club on Wednesday, the 26th of June.

The observed event occurred on the 16th hole, a par 3. Andrew used a 7 iron to drive the tiny white sphere 158 yards from tee to cup.

Lifeguards are on duty from 11 a.m. to 7 p.m., Monday through Friday; 9 a.m. to 7 p.m., weekends and holidays. The pool is restricted to adults from 7 p.m. to 9 p.m.; the pool is closed from 9 p.m. to 6 a.m.

For further information, please call ext. 3126.

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FOR SALE:

AUTOS:

1984 CAVALIER. Red, A/C, P/S, P/B, sunroof, cruise control; \$7,000. Call Rich, ext. 3366.

1983 TOYOTA TERCEL DELUXE SR5. 2-dr. hatchback, 5-speed stick shift, 35 mpg in town, perfect condition, 42,000 mi., available August 1; \$4,500. Call Thornton Murphy, 462-9424 after 7 p.m.

1979 HONDA CIVIC CVCC 4-SPEED HATCHBACK. Runs but needs engine work. New exhaust system, good tires, clean, service manual included. Call Peggy, ext. 2027.

1979 FORD FIESTA. Good condition; \$850 or offer. Call Stan, ext. 3340 or 985-7204 after 6 p.m.

1978 FORD CLUB WAGON VAN. Automatic, 6-cyl. 14 mpg, available August 20, 117,000 mi.; \$1,800. Call Thornton Murphy, 462-9424 after 7 p.m.

1978 PONTIAC SUNBIRD SPORTS COUPE. 4 cylinder, P/S, AM/FM stereo, has new clutch and recent tune-up, gets good gas mileage 25-30 mpg, 60,000 mi, good condition; \$2,000/best offer. Call John Eckhardt, ext. 4191.

1976 VW RABBIT. Stick shift, reg. gas, 4-dr., 24 mpg in town, 92,000 mi., available July 30; \$300. Call Thornton Murphy, 462-9424 after 7 p.m.

MOTORCYCLES:

1980 KAWASAKI K2440. Garage kept, red, good condition, 14,000 mi., new chain and battery; \$500. Call John Bell, ext. 4964.

HOUSES:

2-BEDROOM HOME IN BATAVIA. Older home, recently remodeled, furnace, wiring and plumbing less than 5 years old, enclosed porch, rear deck, lots of perennials including strawberries and raspberries, close to park, school, and downtown; asking \$49,900. Call Roger Rice, ext. 4403 or 898-0347.

3-BEDROOM HOME IN AURORA. For sale by owner, near Aurora University, on Gladstone, two baths, full basement, fenced yard, one car garage; \$72,500. Call Mollie Stoerker, ext. 3232.

MISC:

For the following items call John Bell, ext. 4964: Four brushed aluminum dish rims with lugs and tires, 60 series, \$175; Jensen RE 920, AM/FM, cassette car radio with two pioneer TX-720 surface-mount speakers, \$160.

For the following items, call Richard Rebstock, ext. 3499: Nikon F2 35mm camera, w/35mm lens, and Vivitar 265 flash, \$290; tire (one) P195x75R 14, new on GM wheel, \$30; .44 Mag, Dan Weßson, 8" vented barrel, blue, valid FOID card required to purchase, \$290.

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MISC: (cont'd)

5-PIECE MATCHED BEDROOM SET. Two twin beds w/mattress and box springs, one mirror dresser, one chest of drawers, one nightstand, excellent condition; \$300. Call Ralph, ext. 4724/4698 or Jan, 879-2452.

For the following items call Stan, ext. 3340 or 985-7204 after 6 p.m.: Brinkman model 4000 metal detector, \$50; 18' fiberglass canoe, \$250; 7'x3' butcher block drafting table, \$50.

MULTI-PURE DRINKING WATER PURIFIERS. Affordable units for home use. Call Eugene Hemmerich, 365-2006 evenings.

For the following items call Claudia Foster, ext. 3355: 9000 b.t.u. window air conditioner; 20 inch girl's bike; twin box spring, mattress, and headboard.

For the following items call Bill, ext. 3169: Sears automatic water softener, \$40; Frantz 6-1/2' x 9' overhead garage door, \$25.

LOST: On June 18, 1985; a green box, 10" x 1-1/2" x 1/2" containing a green-handled scalpel. If found, please call Graciela Finstrom, ext. 4645.