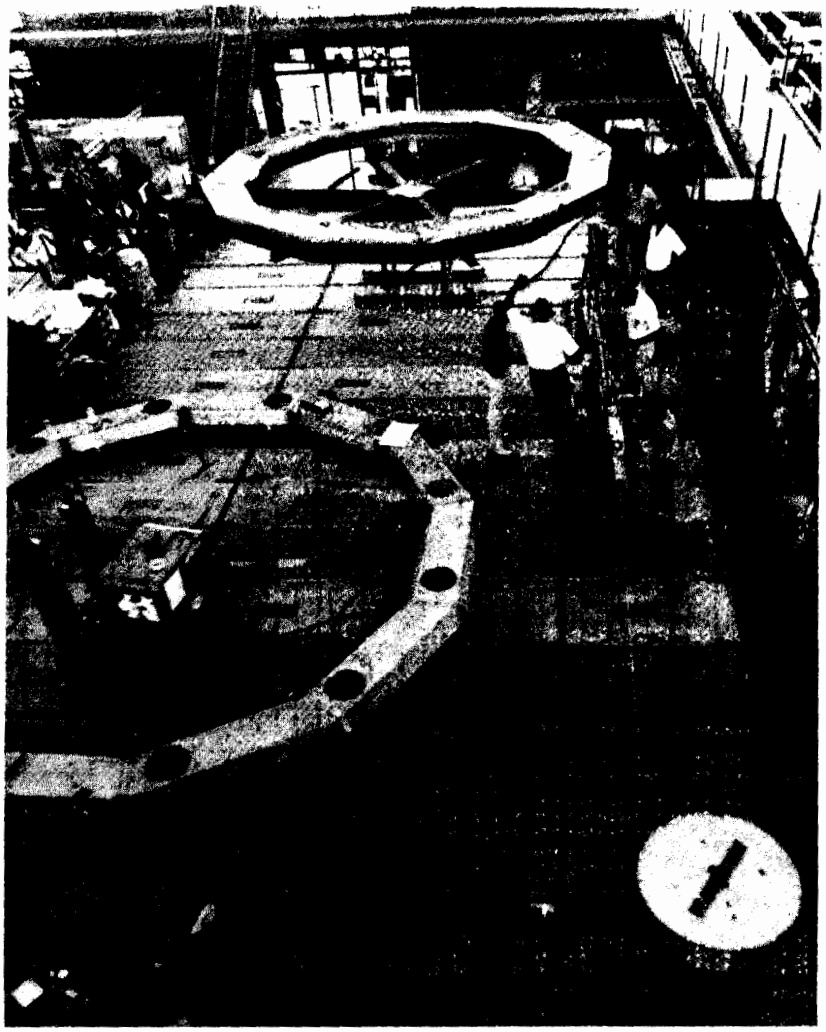
fermilab report

Fermi National Accelerator Laboratory Monthly Report

September 1978



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F. T. Cole, Editor R. Donaldson, Assistant Editor

Contributions, comments, and requests for copies should be addressed to the Publications Office.

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THE COVER: Cryogenic assembly work on the new coils for the Chicago cyclotron.
(Photograph by Fermilab Photo Unit)

CONTENTS SEPTEMBER 1978

BEAM IN THE COOLING RING

A circulating proton beam was achieved in the cooling ring early in the morning of September 1. There had been some indications of beam in earlier tests, but this was the first definitive, reproducible beam.

The beam was estimated to be approximately 10^6 200-MeV protons, which is roughly the antiproton intensity to be expected later. Beam life of up to 10 seconds was observed, which is consistent with the pressure of 5×10^{-8} Torr. The vacuum system has not as yet been baked and only 5% of the design pumping speed has been installed, so improvement in pressure by more than a factor of 100 is expected. Much longer lifetimes will result.

A cooling ring at Fermilab was proposed in 1976 by Cline, McIntyre, Mills, and Rubbia. Construction was started in the fall of 1977.

The cooling-ring work will continue. The next step will be studies of electron cooling, to begin this fall. Studies of beam accumulation will follow.

PHOTON WORKSHOP AT FERMILAB

K. C. Stanfield

A four day Photon Workshop was held at Fermilab on August 1 through August 4, 1978. Approximately ninety individuals from Europe, Canada, and the United States attended. The workshop was intended to provide an opportunity for users to have input into laboratory plans for new facilities and experiments.

Morning sessions were dedicated to formal presentations, while the afternoons were left for informal discussions on a variety of topics, including (i) polarized γ beams, (ii) utilization of the Tagged-Photon Spectrometer, (iii) future facilities, and (iv) comparison of physics aims and capabilities in e^+e^- and γ beams.

Formal presentations in the mornings included talks by S. Yellin (E-25), C. Heusch (E-152), and W. Lee (E-87), so that the present and past program of photon physics at Fermilab was reviewed. G. Feldman (SLAC), H. Meyer (Wuppertal), and R. Thun (Michigan) provided the workshop attendees an opportunity to compare the physics objectives of photon beam experiments with those of e^+e^- machines by reviewing the work at SPEAR and DESY and by anticipating the PEP and PETRA programs.

K. Daum (CERN) reviewed the plans of the experimenters associated with SPS proposal P-109 at CERN while J. Sandweiss (Yale), and K. Goulianos (Rockefeller) each described plans for specific experiments at Fermilab.

K. Stanfield (Fermilab) discussed preliminary plans for a new beam line in Proton East that would be similar to a beam line proposed at CERN. Its purpose would be to provide a high-intensity, pure, broad-band beam for use with the Tevatron. P. Garbincius (Fermilab) described a plan for upgrading the existing Tagged Photon beam for use with the Tevatron. B. Cox (Fermilab) gave a progress report on the new High-Intensity Beam in the Proton Laboratory and described its capabilities as an electron beam.

T. Nash (Fermilab) reported on progress toward the installation of a major new facility, a large forward spectrometer with recoil detector, which is to be installed in the Tagged-Photon Laboratory this fall.

The workshop concluded with a presentation by C. Quigg (Fermilab) that included a workshop summary and a vision of many important results to come from photon physics at high energy.

Although there are to be no proceedings published from this workshop, many of the speakers have provided copies of transparencies which are available from P. Mascione, eleventh floor, Central Laboratory, Fermilab.

THE NEUTRINO AREA IN 1977 AND 1978

Dennis Theriot

The last Fermilab Report article on the Neutrino Area, written by Richard Lundy, appeared in January 1977. The purpose of this article is to chronicle what has happened since that date, during 1977 and most of 1978, which corresponds roughly to my tenure as head of the Neutrino Department. The work reported here was done in large part by a very dedicated group of people who have worked very hard to plan, field, and carry out a very large number of significant experiments in both weak and strong interactions. This group of people includes both my colleagues on the staff of the Neutrino Department and the large group of users who utilize the facilities of the department. Without both groups, the research discussed here would not have been possible.

These two years have been ones of solid accomplishments utilizing the increased intensities that have become available from the accelerator. In the 20-month period from January 1977 through August 1978, the Neutrino Department targeted 2.30×10^{19} protons for an average of 1.15×10^{18} protons protons/month. When this monthly number of protons is divided into protons per pulse using a standard 100-hour operating week and a 10-second repetition rate, the average intensity per pulse is 8×10^{12} protons. With these protons we took 825,000 pictures in the 15-ft bubble chamber for neutrino physics, completed two major neutrino counter experiments and started two more, completed three hadron experiments, and completed two major muon experiments. Each of these will be discussed separately below.

15-Ft Bubble Chamber

After several years of shifting operation in the bubble chamber area between the 15-ft chamber for neutrino physics and the 30-in. chamber for hadron physics, a decision was made to operate only the 15-ft chamber and to complete as many neutrino experiments as possible. Experiment #53, a Columbia-BNL collaboration took 103 K pictures in the 64% Ne mixture with the 2-horn neutrino beam. Experiment #180, a Fermilab-ITEP-IHEP-Michigan collaboration, took 186 K pictures in the 64% Ne mixture with both the 2-horn antineutrino beam and the sign-selected bare-target beam. Experiment #31, an Argonne-Carnegie Mellon-Purdue collaboration, took 147 K pictures in H_2 using the 2-horn antineutrino beam with the plug. This experiment marked the first successful use of the plug, which is used as a dump for the wrong-sign mesons and the proton beam to produce an anti-neutrino beam with smaller neutrino contamination. Experiment #546, a Fermilab-Berkeley-Hawaii-LBL-Washington-Wisconsin collaboration, took 375 K pictures in a 47% Ne mixture using the triplet neutrino beam. This experiment marked the first use of the two-plane external muon identifier (EMI) necessary to aid in their search for dimuon events. A prototype internal picket fence (IPF) was also installed to test the design and usefulness of this device, whose purpose to aid in reducing background in the EMI signals by tagging the time of the event inside the fiducial volume of the chamber. It also allows a time correlation to be made with the EMI, as well as the usual spatial correlation. In May 1978 an engineering test was made of an internal plate system to assess its usefulness in detecting

neutral pions produced in neutrino interactions. Although the mechanical design was acceptable and the concept of plates being easily introduced and removed was successful, turbulence near the top of the chamber did not allow the production of pictures of acceptable quality for physics use. This design is currently being reassessed for changes that will reduce this problem. After the plate tests, the 15-ft chamber returned to production runs for physics and took 97K pictures for E380, a Columbia-BNL collaboration, in the 64% Ne mixture using the new dichromatic neutrino beam built for E356, a neutrino counter experiment.

During this period, the 15-ft bubble chamber can truly be said to have come into full operation. In July 1977, a milestone of 1,000,000 total pictures since initial operation in July 1974 was reached. At this time, the count stands at 1.532×10^6. The record for one month was 131K pictures taken in November 1977 during E546.

Neutrino Counter Experiments

The main efforts in the neutrino counter experiments have centered around multimuon studies and in the preparation of the next generation of a total cross section experiment with a new target and dichromatic beam.

The champion proton user was E310, a Fermilab-Harvard-Pennsylvania-Rutgers-Wisconsin collaboration, with their new NEULAND detector in Lab C. They used 7.2×10^{18} protons with the triplet neutrino beam, the sign-selected bare target antineutrino beam, and the sign-selected bare target beam. The sign-selected bare target beam is a new beam built for this experiment. It is used primarily to produce a beam of antineutrinos

with very little neutrino contamination. The NEULAND detector in Lab C was set up with targets of three different densities and used primarily for multimuon studies.

At the same time, E310 and E546 were using the triplet beam; E482, a Cal Tech-Fermilab-Northwestern-Rochester-Rockefeller collaboration, was set up in Lab E, studying multimuon production by neutrinos in their apparatus, which had targets of two different densities.

During a short period of time in the fall of 1977, when the accelerator was running at 300 GeV/c, E253, a VPI-Oxford-Maryland-NSF collaboration, took some preliminary data on neutrino-electron scattering. When the accelerator returned to 400 GeV/c operation, they were precluded from further operation by the muon background encountered. This problem will, it is hoped, be corrected by the installation of a magnetized toroidal muon spoiler in Enclosure 100. This spoiler will be tested and the main running of this experiment will begin in October, 1978.

The summer of 1978 was used to bring into operation the new 350-GeV/c dichromatic neutrino beam and the new 1100-ton neutrino target in Lab E. Experiment #356, a Cal Tech-Fermilab-Rochester-Rockefeller collaboration, successfully operated the new dichromatic beam at 200 GeV/c and 300 GeV/c for neutrinos and conducted tests at 200 GeV/c and 250 GeV/c for antineutrinos. In addition to the beam itself, a new beam-monitoring system was installed in the decay pipe. This system gives readouts of secondary beam intensity and profiles on a pulse-by-pulse basis and allows secondary-particle ratios to be determined while operating the dichromatic

beam for neutrino physics. In Lab E itself, the full 1100-ton neutrino target was brought into operation. It consists of 650 tons of steel-scintillator spark-chamber target followed by 450 tons of magnetized-steel toroids also instrumented with scintillation counters and spark chambers to operate as a neutrino target. In total, 2.5×10^{18} protons were targeted in this shakedown period. The main running for E356 will begin in the spring of 1979.

Muon Experiments

During this period, two major muon experiments have been completed, E203 and E448. During the spring of 1978, E203, a Berkeley-Fermilab-LBL-Princeton collaboration, ran with the new distributed-target muon spectrometer for 4.4×10^{18} protons (with the triplet target train serving as the muon beam front end) carrying out a search for rare muon-induced processes. At the same time, E448, a Harvard-Fermilab-Chicago-MIT-Michigan State-Tufts collaboration, ran in the Chicago cyclotron spectrometer with a muon shadowing experiment using nuclear targets.

Hadron Experiments

In addition to the previously discussed neutrino and muon experiments the Neutrino Department has also operated a highly successful hadron-physics counter-experiment program. E379, a Stanford-Cal Tech-Rochester collaboration, ran in Lab E using a beam of 10^6, 400 GeV/c protons from the N1-N5 beam line for 1450 hours. They performed a beam-dump particle search for 1 and 2 muon final states. This group will return as E595 and continue their work with protons and extend it to pions during 1979. As part

of the E379 apparatus, the toroidal spectrometer designed for E356 was used for muon momentum analysis.

Two hadron experiments were run in the Chicago cyclotron spectrometer. E369, a Fermilab-Illinois-Harvard-Max Planck-Tufts collaboration, performed a search for charmed particles. They ran for 1000 hours with a beam of 10^6, 225 GeV/c π^- produced from a new target located 200 ft from the end of the neutrino decay pipe.

Experiment #444, a Princeton-Chicago collaboration, ran for 1100 hours in the Chicago cyclotron spectrometer using a beam of 10^7, 225 GeV/c π^+ and π^- using the triplet train as a front end and the muon beam with absorber removed for beam transport. This experiment performed a measurement of high-mass muon pairs.

Operations in the Immediate Future

At present, the Neutrino Department is preparing for an operating period that will feature a new horn beam with a 2-msec spill and the 15-ft bubble chamber filled with deuterium. The horn beam has been improved with a new horn featuring a wider neck to improve reliability and a transformer to stretch the horn current pulse. Many previous horn failures have been traced to high stresses in the narrow neck and the beam-induced failures caused by missteered proton beams. The new design corrects both problems. The transformer will make possible better operation of the EMI/IPF on the 15-ft bubble chamber and simultaneous operation of a large number of neutrino counter experiments along the neutrino beam line.

Finally the 15-ft bubble chamber will operate with a deuterium fill. The procurement of this fill has taken several years because of the large quantity of liquid deuterium involved and consists of the national supply of liquid deuterium for bubble-chamber usage. At the same time E545, a SUNY, Stony Brook-Tufts-Maryland-IIT-Tohoku collaboration, is running in the 15-ft bubble chamber. E253, previously mentioned, will run in the Wonder Building; E531, an Ohio State-McGill-Toronto-Ottawa-Japanese and Korean collaboration, will perform a study of weak decay lifetimes of neutrino-induced particles in a tagged-emulsion spectrometer in the Wonder Building; E553, a Cornell-Pittsburgh-Fermilab-Houston-Sydney-York-Lund collaboration, will search for short-lived particles produced by neutrinos using a hybrid emulsion-visual detector in Lab C; and E564, a Fermilab-ITEP-IHEP-Cracow-JINR-Kansas-Washington collaboration, will perform an experiment on the direct detection of short-lived particles from neutrino interactions in nuclear emulsions inside the 15-ft bubble chamber. This lineup of five simultaneously operating neutrino experiments will set a new record. E390, an Argonne-Carnegie Mellon-Purdue collaboration, will run later in the 15-ft bubble chamber with deuterium fill with the horn set for antineutrino operation. E594, a Fermilab-MIT-Michigan State-Northern Illinois collaboration, will begin setup in Lab C.

Plans for 1000-GeV Improvements

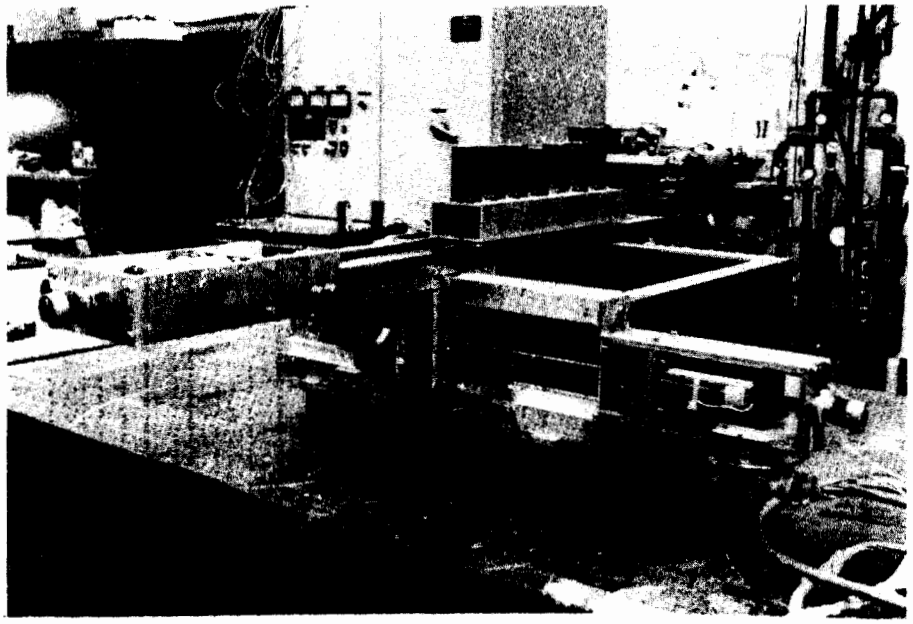
The 1976 Aspen Summer Study did a very good job in layout of the necessary changes in the Neutrino Area for 1000-GeV/c operation. Most of the departmental work since then has concentrated on detailed design of the various changes. T. B. W. Kirk has completed a tentative design for a new

800-GeV/c muon beam to be built between the present Neutrino and Proton Areas--finally a Muon Area after all these years of sharing the Neutrino Area. S. Mori has calculated several possible shielding upgrades, featuring an iron core for the main neutrino shield. L. Stutte has begun detailed design of a 750-GeV/c dichromatic beam. Design work has started on a lengthened target area for the dichromatic beam.

Conclusion

As can be seen from the above recitation of accomplishments, the Fermilab Neutrino Department has a solid record for the years 1977 and 1978 and need not bow to anyone for the amount of physics it has produced. The future looks bright. One major next-generation neutrino experiment has been successfully brought into operation. Another one is in preparation. The 1000-GeV upgrade will expand our facilities and give us beams that cannot be equalled anywhere.

As a retiring department head I would like to take this opportunity to thank everyone who has made this possible. I have thoroughly enjoyed my association with the Neutrino Department staff, of which I remain a member, and with the many fine and dedicated users whom it has been my pleasure to serve over the last two years.



A target positioner for pion beams in the new High-Intensity Laboratory.
(Photograph by Fermilab Photo Unit)

Construction work for the reverse-injection line into the Main Ring.
(Photograph by Fermilab Photo Unit)

REVISED EXPERIMENTAL PROGRAMMING PROCEDURES

Effective immediately and until further notice the responsibilities pertaining to the operation of the experimental program at Fermilab previously held by E. L. Goldwasser will be discharged in the manner outlined below. Individuals wishing clarification on aspects of this plan should contact T. H. Groves in the Director's Office.

Experimental Proposals. T. H. Groves will continue to function as Secretary of the Physics Advisory Committee. New proposals and routine correspondence dealing with the handling of proposals should be addressed to him as previously. Non-routine correspondence regarding the handling of proposals which previously would have been addressed to E. L. Goldwasser should now be addressed to P. V. Livdahl, Acting Director.

Preparation of Agreements. Preparation of Agreements is handled primarily in the Research Division and no changes in the existing procedures are contemplated. P. V. Livdahl will approve the Agreements in final form on behalf of the Laboratory.

Implementation of Agreements. Implementation of Agreements is the responsibility of J. Peoples, Head of the Research Division. No changes are intended in this regard.

Scheduling of Experiments. The Program Planning Office headed by A. F. Greene will continue to be the focal point for scheduling activity in the Laboratory. Major decisions involving schedules will be reviewed and approved by P. V. Livdahl. Correspondence involving the scheduling of experiments which previously would have been directed to E. L. Goldwasser

should now be directed to P. V. Livdahl. He will be assisted in dealing with these matters by J. Peoples and the Program Planning Office staff.

NOTES AND ANNOUNCEMENTS

PHOTOGRAPHY UNIT REMINDER. . .

The Fermilab Photo Unit would like to remind experimenters that no time charges are involved for any photography. Charge-backs to experiments are for materials only, with the exception of overtime work, and are charged to a work package account code.

Appointments are scheduled on a first-come first-serve basis. Files are kept on all photos taken. Prints may be ordered by mail at Photography (Central Laboratory Catacombs East) or from the Library (Central Laboratory third floor crossover).

Persons requesting photo services must have spokesperson authorization or a code 3 on their Fermilab I. D.

The Photography Unit cannot function as a "processing station" for film shot by other personnel, nor can these pictures be included in the cataloging system.

All black and white processing and printing is done in-house for optimum quality and at considerable savings.

Photography Department hours are 8:30 a. m. to 5:00 p. m, Exts. 3349 and 3350.

I. D. photos are taken daily from 9:00 a. m. to 11:30 a. m. and 12:30 p. m. to 4:30 p. m.

SUMMARY OF OPERATIONS - AUGUST 1978

Program Planning Office

The accelerator and experimental facilities were operated throughout the month of August for experiments with two interruptions for maintenance and development activities. The variation of demands on the accelerator during the month were considerable. These came about due to unexpected failures of the target box for the tagged-photon beam in Proton-East and due to the request for 200-GeV beam by the neutrino experiment in order to calibrate equipment used to measure the flux of secondary particles from the dichromatic neutrino beam. As a result of these varied demands the proton intensities were much less than normally available.

The principal experimental activities were centered around use of the neutrino beam. The 15-ft bubble chamber run was ended in mid-August when a period of testing and calibration began in the Neutrino Area. A total of 96,000 pictures were taken during this run for the chamber. Two experiments were completed in the Meson Area. Both of these used the neutral hyperon beam at the end of the M2 beam line. By the end of August several other experiments were nearing completion as the time for a month-long shutdown in September neared. This shutdown will also begin the interruption of activities in the Meson Area for a six-month period.

FERMI NATIONAL ACCELERATOR LABORATORY
MONTHLY OPERATIONS HISTORY
AUGUST 1978

Date	Accelerator	Internal Target Area	Proton Area	Neutrino Area	Meson Area
Tue. 8/1	Accelerator Studies & Tuneup for HEP				
Wed. 8/2	Reprs: Cap tree, Booster RF, MR Vac	OFF	High Int.Bm.Tsts. (PW) OFF for repairs (PE) OFF (PC)	Neutrino 356 & 15'ν/H_2&Ne #380 (NO)	Ξ^0 Prod. 495 (M2) Part.Search 490 (M1W) Incl.Scatt.451 (M6E) K Chg.Exch.585(M4) π-μ Atoms 533(M3)
Thu. 8/3	Startup for HEP				
Fri. 8/4	~1.5x10^{13}ppp @400 GeV				
Sat. 8/5					
Sun. 8/6	(1.25 sec flattop)				
Mon. 8/7	Accelerator Studies and Maintenance & Development				
Tue. 8/8					
Wed. 8/9					
Thu. 8/10	Accelerator Startup				
Fri. 8/11	Tuning:High Extraction Losses		High Int.Bm.Tsts. (PW) OFF (PE) OFF (PC)	Neutrino 356 & 15'ν/H_2&Ne#380 (NO)	Part.Sch.490(M1W) Incl.Scatt. 451 (M6E) Ξ^0Prod.495 (M2) K Chg.Exch. 585 (M4) π-μ Atoms 533 (M3)
Sat. 8/12	~1.3x10^{13}ppp @400 GeV (1sec flattop)	OFF			
Sun. 8/13					
Mon. 8/14	Reprs:MR Gnd.Fault			(15' B.C. OFF) Neutrino 356 (NO)	
Tue. 8/15	Reprs:Tev.Anode PS, Linac RF,SWYD Loss Mon.				
Wed. 8/16	Extr.Loss Diagnostics		Photoprod.152B (PE) High Int.Bm.Tsts. (PW) OFF (PC)		
Thu. 8/17	Reprs:H$^-$source;BOS				
Fri. 8/18	~7x10^{12}ppp @200/400 GeV (1 sec flattop)				
Sat. 8/19	Reprs:SWYD Controls				
Sun. 8/20	6x10^{12}ppp 200 GeV(1 msec fast spill), 400 GeV(1 sec flattop)				
Mon. 8/21					
Tue. 8/22	set up 200 GeV front porch				
Wed. 8/23	200 GeV front porch, 400 GeV flattop(1 sec)				
Thu. 8/24	Power Glitch + MRRF reprs.		OFF due to target box(PE) High Intensity Beam Tests(PW) OFF (PC)		p Polariz.505 (M2) Part.Sch.490 (M1W) Incl.Scatt.451 (M6E) K Chg.Exch.585(M4) π-μ Atoms 533(3)
Fri. 8/25					
Sat. 8/26	1.7 & 0.3x10^{13}ppp @400 GeV (1 sec flattop)				
Sun. 8/27				OFF - substation failure	
Mon. 8/28	Maintenance & Development				
Tue. 8/29					
Wed. 8/30	Sitewide power failure				
Thu. 8/31	Accelerator Startup; replace MR magnet & align new septum				

BEAM UTILIZATION BY

	Beam	Hours
PROTON AREA		
Photoproduction #152B	PE	100
High Intensity Beam Tests	PW	100
NEUTRINO AREA		
Neutrino #356	N0	280
15' ν/H_2+N_e #380	N0	-
Nuclear Fragments #466	N0	-
Quark #549	N0	-
MESON AREA		
Particle Search #490	M1W	270
Ξ^0 Production #495	M2	290
p Polarization #505	M2	50
Λ β-Decay #361	M2	40
π-μ Atoms #533	M3	370
K Charge Exchange #585	M4	380
Inclusive Scattering #451	M6E	330
Nuclear Chemistry #81A	M0	-
TOTAL HOURS FOR HIGH ENERGY PHYSICS		2210

EXPERIMENTAL ACTIVITY -- AUGUST 1978

Activities

data: for study of elastic and inelastic Compton scattering

engineering tests: of a new 200 GeV high intensity pion beam

data, calibration & tests: for study of deep inelastic ν and $\bar{\nu}$ scattering using a dichromatic beam

data: bubble chamber experiment with heavy neon/hydrogen fill; 44K pictures taken during August for a total of 96K pictures for this run.

data: 2 targets exposed

tests: 1 target exposed

data: for study of charmed particle production in a high resolution streamer chamber

completed: measurement of the production spectrum and polarization of Ξ^0 and $\bar{\Lambda}^0$ hyperons.

completed: search for proton polarization produced in 400 GeV inclusive reactions and detected through study of Λ^0 decays

setup and tests: for future measurement of Λ^0 β-decay parameters

data: for measurement of the rate of formation of π-μ atoms in K_L^0 - decay

data: for study of KN charge exchange scattering

data: for study of the A - dependence of inclusive processes

data: 8 targets exposed

FACILITY UTILIZATION SUMMARY -- AUGUST 1978

I. Summary of Accelerator Operations

		Hours	
A.	Accelerator use for physics research		
	Accelerator physics research	33.0	
	High energy physics research	383.7	
	Subtotal		416.7
B.	Other activities		
	Accelerator setup and tuning to experimental areas	6.4	
	Program interruption	114.3	
	Unscheduled interruption	206.6	
	Subtotal		327.3
C.	Unmanned time		-
	Total		744.0

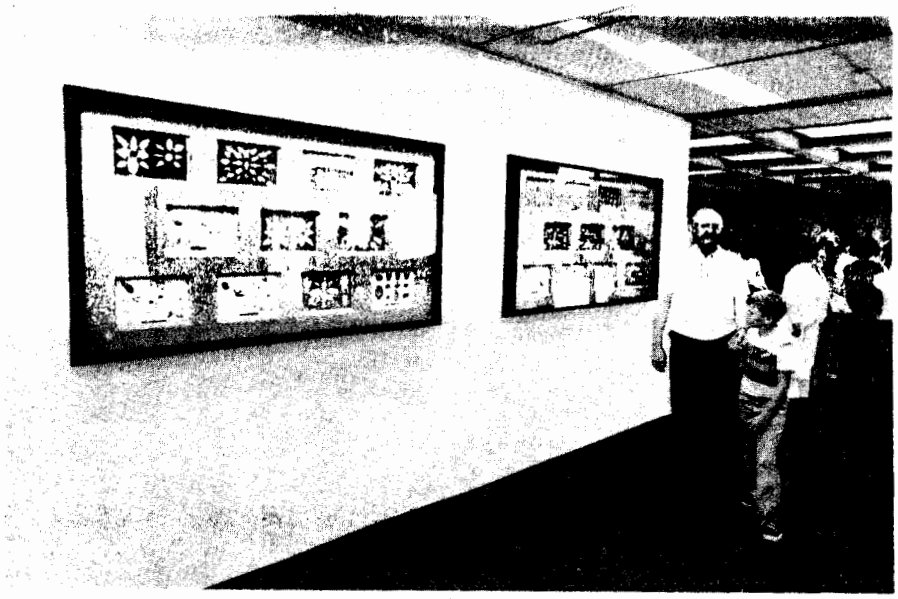
II. Summaries of High Energy Physics Research Use

		# of Expts.	Hours	Results
A.	Counter experiments	9	2110	2 exp. completed
B.	Bubble chamber expts.	1	-	44 K pictures in 15 ft
C.	Emulsion expts.	0	-	
D.	Special target expts.	3	-	11 targets exposed
E.	Test experiments	0	-	
F.	Engineering studies and tests	1	100	high intensity beam tests
G.	Other beam use			
	Totals	14	2210	

III. Number of Protons Accelerated and Delivered ($\times 10^{18}$ p)

A.	Beam accelerated in Main Ring	1.37	
B.	Beam delivered to experimental areas	1.24	
	Meson Area	0.49	
	Neutrino Area		
	Slow Spill	-	
	Fast Spill	0.62	(includes beam at both 200 and 400 GeV)
	Proton Area	0.13	

John Satti and Leonard Sawicki inspecting a low-current superconducting magnet they are building for use in the Proton Area.
(Photograph by Fermilab Photo Unit)



A portion of the Mier collection as it is mounted for exhibition on the 15th floor of the Central Laboratory.

(Photograph by Fermilab Photo Unit)

Mr. August Mier visiting the permanent exhibit of his collection of native American artifacts found on the Fermilab Site.

(Photograph by Fermilab Photo Unit)

MANUSCRIPTS AND NOTES PREPARED FROM AUGUST 5, 1978 TO SEPTEMBER 11, 1978

Copies of preprints with Fermilab publication numbers can be obtained from the Publications Office or Theoretical Physics Department, 3rd floor east, Central Laboratory. Copies of some articles listed are on the reference shelf in the Fermilab Library.

Experimental Physics

D. Antreasyan et al. (Experiment #100/ #300)	Production of Hadrons at Large Transverse Momentum in 200, 300, and 400 GeV p-p and p-N Collisions (Submitted to Phys. Rev. D)
H. Rudnicka et al. (Experiment #172)	Momentum Dependence of Hadrons Produced in ν ($\bar{\nu}$) Ne Interactions (Submitted to the Neutrino Physics at Accelerators Conference, Oxford, July 2-7, 1978; also submitted to the IX International Symposium on High Energy Multiparticle Dynamics, Prague, July 2-7, 1978)
S. Conetti et al. (Experiment #177)	400 GeV/c pp Elastic Scattering: Energy and Angle Dependence at High Momentum Transfer (Submitted to Phys. Rev. Lett.)
J. P. Berge et al. (Experiment #180)	$\bar{\nu}_\mu$p and $\bar{\nu}_\mu$n Charged-Current Interactions Unfolded from High Energy $\bar{\nu}_\mu$ Interactions in Neon (FERMILAB-Pub-78/68-EXP; submitted to Phys. Rev. Lett.)
J. P. Berge et al. (Experiment #180)	The Production of μe Events in Antineutrino-Nucleon Interactions (FERMILAB-Pub-78/69-EXP; submitted to Phys. Rev. Lett.)
D. Gross et al. (Experiment #198/ #552)	Proton-Proton Elastic Scattering from 30 to 250 GeV/c (Submitted to the XIX International Conf. on High Energy Physics, Tokyo, August 23-30, 1978)
D. Berg et al. (Experiment #272)	Pion Dissociation in the Nuclear Coulomb Field (Submitted to the XIX International Conf. on High Energy Physics, Tokyo, August 23-30, 1978)
E. Lehman et al. (Experiment #281)	Tests of the Quark-Parton Model in Soft Hadronic Processes
H. Weisberg et al. (Experiment #324)	s-Dependence of Proton Fragmentation by Hadrons II. Incident Laboratory Momenta 30-250 GeV/c [Phys. Rev. 17D, 2875 (1978)]

M. Dris et al. (Experiment #395)	π^+ Structure Information from a Jet Experiment (Submitted to Phys. Rev. D)
K. Heller et al. (Experiment #440)	Polarization of Lambdas and Antilambdas Produced by 400 GeV Protons (Submitted to Phys. Rev. Lett.)
L. Schachinger (Experiment #440)	A Precise Measurement of the Λ^0 Magnetic Moment

Theoretical Physics

R. B. Pearson	Application of Jastrow Wave Functions to Quantum Lattice Spin Theories (FERMILAB-Pub-78/59-THY; submitted to Phys. Rev. D)

DATES TO REMEMBER

October 12-13, 1978	Proposal Presentation Meeting.
November 9-10, 1978	Fall meeting of the Physics Advisory Committee.
January 26, 1979	Deadline for receipt of all new proposals and other written materials to be considered at the spring meeting of the Physics Advisory Committee.
February 8-9, 1979	Proposal Presentation Meeting.
March 8-9, 1979	Spring meeting of the Physics Advisory Committee.
May 4, 1979	Deadline for receipt of all new proposals and other written materials to be considered at the summer meeting of the Physics Advisory Committee.
May 17-18, 1979	Proposal Presentation Meeting.
June 16-22, 1979	Summer meeting of the Physics Advisory Committee (Aspen).

DR. ERNEST MALAMUD
RD/MESON
[redacted]
FERMILAB

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