FACILITY UTILIZATION SUMMARY -- SEPTEMBER 1977

I. Summary of Accelerator Operations

			Hours	
A. Accelerator use for physics research				
Accelerator physics research			38.9	
High energy physics research			311.6	
Research during other use			(8.7)	
		Subtotal		350.5
B. Other activities				
Accelerator setup and tuning to experimental areas			15.9	
Program interruption	Scheduled	264.0	264.3	
	Ad hoc	0.3		
Unscheduled interruption			89.3	
		Subtotal		369.5
C. Unmanned time			—	
		Total		720.0

II. Summaries of High Energy Physics Research Use

	# of Expts.	Hours	Results
A. Counter experiments	9	1227.0	—
B. Bubble-chamber experiments	—	—	—
C. Emulsion experiments	—	—	—
D. Special target experiments	—	—	—
E. Test experiments	—	—	—
F. Engineering studies and test	—	—	—
G. Other beam use	—	—	—
	9	1227.0	

III. Number of Protons Accelerated and Delivered ($\times 10^{17}$)

A. Beam accelerated in Main Ring				7.77
B. Beam delivered to experimental areas		@ 200 GeV	@ 300 GeV	
Meson Area		—	4.68	
Neutrino Area				
	Slow Spill	—	< 0.01	
	Fast Spill	—	< 0.01	
Proton Area		0.32	0.38	
	Totals	0.32	5.07	5.39

BEAM UTILIZATION BY

	Beam	Hours
MESON AREA		
Polarized Scattering #61	M1E	196.0
Backward Scattering #290	M6W	196.0
Hadron Jets #395	M2	91.5
NEUTRINO AREA		
Dimuon #444	N1	19.0
Neutrino #482	N5	31.1
PROTON AREA		
Photon Search #95A	PW	251.4
Photoproduction #152B	P2	246.0
Di-Lepton #288	PC	112.8
INTERNAL TARGET AREA		
p-He Scattering #289	C0	83.2
TOTAL HOURS FOR EXPERIMENTS		1227.0

EXPERIMENT -- SEPTEMBER 1977

Activities

data: elastic scattering 300-GeV protons on a polarized proton target with forward spectrometer and recoil spectrometers

data: $\pi^{\pm}p$ backward elastic scattering at 30 GeV/c incident momentum

tests: beam tuning, calorimeter calibration with muons, calorimeter calibration with electrons, Cerenkov counter, pressure curves, etc.

setup & tests: plateauing and timing counters with muons

setup & tests: calibration of detectors with muons and hadrons

data: inclusive π^{0} production and single photon production by 200- and 300-GeV protons

setup & tests: calibration of forward shower detector with an electron beam

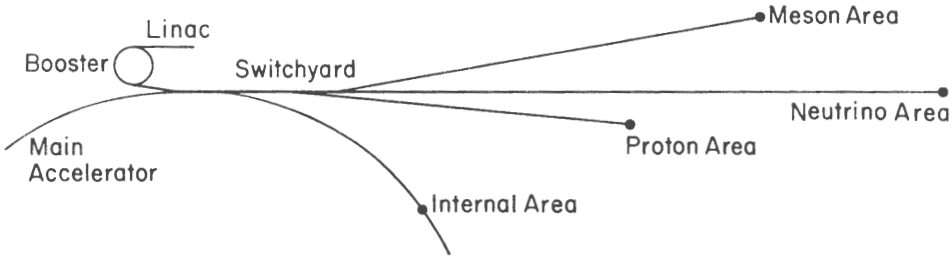
data: study of dimuon spectra above 5-GeV dimuon effective mass produced by 200- and 300-GeV protons on copper and platinum targets

data: elastic scattering of protons from a hydrogen-deuterium jet target as a calibration for helium jet data

FERMI NATIONAL ACCELERATOR LABORATORY
MONTHLY OPERATIONS HISTORY
SEPTEMBER 1977

Date	Accelerator	Internal Target Area	Proton Area	Neutrino Area	Meson Area
Thurs. 9/1					
Fri. 9/2					
Sat. 9/3					
Sun. 9/4					
Mon. 9/5					
Tues. 9/6	Linac checkout.				
Wed. 9/7	Linac startup; Main Ring secured and tested with power.				
Thurs. 9/8	Linac & Booster startup and repairs; replace Main Ring magnet.				
Fri. 9/9	Feeder repairs; Linac & Booster tuneup.				
Sat. 9/10	Main Ring startup.				
Sun. 9/11	Main Ring startup and orbit measurements; magnets moved.				
Mon. 9/12	Accelerator and experimental area startup			OFF for construction	Exp. area preparations
Tues. 9/13	~0.4x10^{13}ppp	Weekday and evening operation for p-He Scattering 289	200 & 300 GeV Di-Lepton 288 (PC) Photon Search 95A (PW) Photoproduction 152B (P2)		
Wed. 9/14					
Thurs. 9/15	Accel. Studies @200/300 GeV (2 sec flattop @200 and @300 GeV)				
Fri. 9/16					300 GeV Pol.Scatt.61(M1E) Bkwd.Scatt.290 (M6W) Tests for Had.Jets 395(M2) Tests for Incl.K^o_s383 (M4)
Sat. 9/17					
Sun. 9/18					
Mon. 9/19			Photon Search 95A (PW) Photoproduction 152B (P2) OFF for repairs (PC)		
Tues. 9/20					
Wed. 9/21	Accel. Studies ~0.8x10^{13}ppp @300 GeV				
Thurs. 9/22					
Fri. 9/23					
Sat. 9/24				Neutrino Area startup 300 GeV Night and weekend operation with slow spill Di-Muon 444 (N1) Neutrino 482(N5)	
Sun. 9/25					
Mon. 9/26					
Tues. 9/27	Accel. Studies				
Wed. 9/28		Full time operation for p-He Scattering 289	Di-Lepton 288(PC) Photon Search 95A (PW) Photoproduction 152B (P2)		
Thurs. 9/29	Ramp change; obstacle search				
Fri. 9/30	~1x10^{13}ppp @200/300 GeV			Full time operation with slow and fast spill Di-Muon 444 (N1) Neutrino 310(N0) Neutrino 482(N5) Neutrino 253(N0)	

Fermi National Accelerator Laboratory



Experiments in the Research Areas

OCTOBER - DECEMBER 1977

Internal Area

p-He SCATTERING #289
PROTON POLARIZATION #522
p-N SCATTERING #552

Proton Area

PROTON EAST:
PHOTOPRODUCTION #87A
PHOTOPRODUCTION #152B

PROTON CENTER:
DI-LEPTON #288

Neutrino Area

NEUTRINO BEAM:
NEUTRINO #253
NEUTRINO #319
NEUTRINO #482
15-FT BUBBLE CHAMBER

MUON/HADRON BEAM:
MUON #203/#391
DI-MUON #449

Meson Area

M1 BEAM:
POLARIZED SCATTERING #61
TOTAL CROSS SECTION #104

M2 BEAM:
HADRON JETS #395
MULTI-MUON #439

M3 BEAM:
PARTICLE SEARCH #540

M4 BEAM:
INCLUSIVE K^0_S #383

M6 BEAM:
ASSOCIATED PRODUCTION #99
BACKWARD SCATTERING #290
HADRON DISSOCIATION #396

SITUATION REPORT - OCTOBER 1977

PAGE 1 — FERMI NATIONAL ACCELERATOR LABORATORY — PROGRAM PLANNING OFFICE
12 OCT 1977

EXPERIMENTAL PROGRAM SITUATION REPORT

THE EXPERIMENTAL PROGRAM SITUATION AT FERMILAB IS SUMMARIZED BELOW. THE EXPERIMENTS ARE LISTED SEPARATED BY EXPERIMENTAL AREA UNDER CATEGORIES THAT BEST DESCRIBE THEIR CIRCUMSTANCE AS OF OCTOBER 1, 1977. FOR EXPERIMENTS WHICH HAVE BEEN COMPLETED OR HAVE RECEIVED BEAM THERE IS INDICATION OF THE AMOUNT OF RUNNING TIME OR EXPOSURE. THE EXPERIMENTAL AREA NAMES ARE ABBREVIATED AS FOLLOWS: MESON AREA (MA), NEUTRINO AREA (NA), PHOTON AREA (PA), INTERNAL TARGET AREA (ITA).

TOTAL NUMBER OF APPROVED EXPERIMENTS - 272

AREA-BEAM		SPOKESPERSON	EXTENT OF RUN TO DATE	DATE COMPLETED
A. EXPERIMENTS THAT HAVE COMPLETED DATA TAKING (199):				
(ONLY EXPERIMENTS COMPLETED SINCE 1 JAN 1977 ARE LISTED BELOW)				
MA-M1	HADRON JETS #236A	MOCKETT	1,700 HOURS	20 JUL 1977
	INCLUSIVE SCATTERING #324	WEISBERG	1,200 HOURS	13 AUG 1977
	FORM FACTOR #456	STORK	1,450 HOURS	13 APR 1977
	HIGH ENERGY CHANNELING #507	GIBSON	350 HOURS	30 MAY 1977
-M2	INCLUSIVE NEUTRAL MESON #350	KENNEY	900 HOURS	24 FEB 1977
	INCLUSIVE NEUTRON #404	GUSTAFSON	350 HOURS	5 JUL 1977
	LAMBDA MAGNETIC MOMENT #440	BUNCE	250 HOURS	22 MAR 1977
	LAMBDA POLARIZATION #441	PONDROM	400 HOURS	2 JUL 1977
-M3	NEUTRON-NUCLEUS INELASTIC #438	JONES	350 HOURS	10 APR 1977
-M4	K ZERO CHARGE RADIUS #226	TELEGDI	1,200 HOURS	17 MAR 1977
	K ZERO CROSS SECTION #486	WINSTEIN	950 HOURS	17 MAR 1977
-M6	INCLUSIVE SCATTERING #118A	FRIEDMAN	2,550 HOURS	20 JUL 1977
NA-NO-HORN	15-FOOT ANTI-NEUTRINO/H2 #31A	DERRICK	211K PIX	13 AUG 1977
	15-FOOT NEUTRINO/H2ENE #53A	BALTAY	163K PIX	24 MAY 1977
	EMULSION/NEUTRINO #536	NIU	2 STACKS	13 AUG 1977
-MUON/HADRON	PARTICLE SEARCH #369	KIRK	1,000 HOURS	13 AUG 1977
-15-FT	PARTICLE SEARCH #379	WOJCICKI	1,250 HOURS	8 JUN 1977
PA-PE	PARTICLE SEARCH #325	CRONIN	1,500 HOURS	28 FEB 1977
-PC	DI-HADRON #494	GOOD	1,950 HOURS	21 FEB 1977
-PW	PHOTON-PROTON ELASTIC #177A	ORDAR	2,400 HOURS	19 APR 1977
ITA-C-0	PHOTON-NUCLEON SCATTERING #198A	OLSEN	900 HOURS	19 APR 1977
	PHOTON-NUCLEON SCATTERING #381	MALAMUD	600 HOURS	30 MAR 1977
	NUCLEAR FRAGMENTS #442	TURKOT	1,200 HOURS	15 AUG 1977

			EXTENT OF RUN TO DATE	DATE OF RECENT RUN
B. EXPERIMENTS THAT ARE IN PROGRESS (23):				
MA-M1	TOTAL CROSS SECTION #104	KYCIA	1,400 HOURS	1 JAN 1975
	POLARIZED SCATTERING #61	CHAMBERLAIN	1,500 HOURS	1 OCT 1977
-M2	HADRON JETS #395	SELOVE	500 HOURS	1 OCT 1977
	MULTI-MUON #439	GARELICK	450 HOURS	1 JUL 1977
	PARTICLE SEARCH #468	STEINBERG	300 HOURS	1 OCT 1977
-M6	HADRON DISSOCIATION #396	GOULIANOS	700 HOURS	1 JUL 1977
	BACKWARD SCATTERING #290	BAKER	750 HOURS	1 OCT 1977
	MULTIPARTICLE #110A	DZIERBA	1,000 HOURS	1 JUL 1977
-OTHER	NUCLEAR CHEMISTRY #81A	KAUFMAN	158 BOMBARDMENTS	1 OCT 1977
NA-NO-HORN	15-FOOT NEUTRINO/H2 #45A	ROE	162K PIX	1 APR 1976
	15-FOOT ANTI-NEUTRINO/H2ENE#180	ROE	273K PIX	1 JUL 1977
-NO-TRIPLET	NEUTRINO #310	CLINE	2,150 HOURS	1 OCT 1977
-MUON/HADRON	TEST MUON IRRADIATION #501	LANDE	2 TARGETS EXPOSED	1 JAN 1977
-15-FT	15-FOOT PI- - P @ 100 #03A	KITAGAKI	11K PIX	1 APR 1975
	15-FOOT PI- - PENE @ 200 #09	FRETTER	4K PIX	1 JUL 1975
	15-FOOT PI- - P @ 360 #384	LANNUTTI	20K PIX	1 APR 1976
-OTHER	MONOPOLE #502	BARTLETT	COSMIC RAY RUNNING	1 JUL 1977
	NUCLEAR FRAGMENTS #466	KAUFMAN	5 TARGETS EXPOSED	1 APR 1977
PA-PE	PHOTOPRODUCTION #87A	LEE	3,400 HOURS	1 OCT 1977
-PC	DI-LEPTON #288	LEDERMAN	4,250 HOURS	1 OCT 1977
-PW	PHOTON SEARCH #95A	COX	3,200 HOURS	1 OCT 1977
ITA-C-0	PHOTON-PROTON POLARIZATION #313	NEAL	850 HOURS	1 APR 1977
	PHOTON-HELIUM SCATTERING #289	MALAMUD	450 HOURS	1 OCT 1977

			EXTENT OF RUN TO DATE	DATE OF RECENT RUN
C. EXPERIMENTS THAT ARE IN TEST STAGE (6):				
MA-M4	INCLUSIVE K-SHORT #303	KOBRAK		1 OCT 1977
-M6	ASSOCIATED PRODUCTION #99	DIEBOLD	200 HOURS	1 OCT 1977
NA-NO-TRIPLET	NEUTRINO #482	SCIULLI	450 HOURS	1 OCT 1977
	NEUTRINO #253	NO		1 OCT 1977
-MUON/HADRON	DI-MUON #444	SMITH	20 HOURS	1 OCT 1977
PA-PE	PHOTOPRODUCTION #152D	HEUSCH	500 HOURS	1 OCT 1977

			EXTENT OF APPROVAL
D. EXPERIMENTS BEING INSTALLED (5):			
MA-M1	HADRON DISSOCIATION #272	FERBEL	600 HOURS
-M3	PARTICLE SEARCH #540	LONGO	PARASITIC RUNNING
NA-NO-TRIPLET	15-FOOT NEUTRINO/H2ENE #546	HUSON	PARASITIC RUNNING
-MUON/HADRON	MUON #203A	KERTH	500 HOURS
	MUON #391	KERTH	PARASITIC RUNNING

			EXTENT OF APPROVAL	
E. EXPERIMENTS TO BE SET UP WITHIN A YEAR (22):				
MA-M1	PARTICLE SEARCH #354	KYCIA	PARASITIC RUNNING	
	PARTICLE SEARCH #490	SANDWEISS	TEST RUNNING	
-M2	LAMBDA-BAR PRODUCTION #495	HELLER	400 HOURS	
-M3	PI-MU ATOMS #533	ARONSON	500 HOURS	
-M6	INCLUSIVE SCATTERING #451	BARTON	400 HOURS	
NA-NO-DICHROM	NEUTRINO #356	SCIULLI	1,000 HOURS	NOTE: THE AVAILABILITY TO SET UP THESE EXPERIMENTS DURING THE NEXT YEAR IS CONTINGENT ON THE AVAILABILITY OF FUNDS.
-NO-WB HORN	15-FOOT NEUTRINO/D2 #151A	SNOW	100K PIX	
	15-FOOT NEUTRINO/D2 #227	ENGELMANN	100K PIX	
	15-FOOT ANTI-NEUTRINO/D2 #390	CARMONY	300K PIX	
	NEUTRINO #531	REAY	PARASITIC RUNNING	
	NEUTRINO #553	HAND	PARASITIC RUNNING	
	15-FOOT G EMULSION/NEUTRINO#564	VOYVODIC	PARASITIC RUNNING	
-MUON/HADRON	MUON #448	LOOMIS	PARASITIC RUNNING	
-OTHER	QUARK #549	LONGO	PARASITIC RUNNING	
	EMULSION/PI- @200 #481	TAKAHASHI	EMULSION EXPOSURE	
	EMULSION/PI- @ > OB = 200 #503	OGATA	EMULSION EXPOSURE	
	EMULSION/PI- @ > OB = 200 #506	DAKE	EMULSION EXPOSURE	
	EMULSION/PIONS @ >300 #525	WILKES	EMULSION EXPOSURE	
	EMULSION/PI- @300 #568	HEBERT	EMULSION EXPOSURE	
PA-PE	PHOTOPRODUCTION #401	GORMLEY	600 HOURS	
ITA-C-0	PROTON POLARIZATION #522	OGREN	800 HOURS	
	P-N SCATTERING #552	SANNES	800 HOURS	

PAGE 2 EXPERIMENTAL PROGRAM SITUATION REPORT (CONT'D) 12 OCT 1977

AREA-BEAM		SPOKESPERSON	EXTENT OF APPROVAL
F. OTHER APPROVED EXPERIMENTS (17):			
MA-M1	PARTICLE SEARCH #515	ROSEN	800 HOURS
-M6	HADRON JETS #553	MALAMUD	1,600 HOURS
NA-NO-DICHROM	15-FOOT NEUTRINO/H2GNE #300	BALTAY	200K PIX
	15-FOOT ANTI-NEUTRINO/H2GNE#588	STEVENSON	200K PIX
-15-FT	15-FOOT P - P & NE @ 400 #291	MANN	25K PIX
-30-IN	30-INCH PI- - HI Z @ 300 #304	WALKER	200K PIX
-OTHER	EMULSION/PROTONS @ 400-500 #499	IWAI	EMULSION EXPOSURE
	EMULSION/PROTONS @ 500 #500	WOLTER	EMULSION EXPOSURE
	EMULSION/PROTONS @ 500 #524	WILKES	EMULSION EXPOSURE
	EMULSION/PROTONS @ 400-500 #547	JACQUOT	EMULSION EXPOSURE
PA-PE	PARTICLE SEARCH #400	PEOPLES	400 HOURS
	PHOTOPRODUCTION #458	LEE	1,000 HOURS
-PC	CHARGED HYPERON #497	LACH	400 HOURS
-PW	PION INCLUSIVE #258	PIROUE	800 HOURS
	DI-MUON #326	PIROUE	800 HOURS
	C-TEST #302	CESTER-REGGE	400 HOURS
	PARTICLE SEARCH #567	CESTER-REGGE	500 HOURS

PENDING PROPOSALS (39):			EXTENT OF REQUEST
MA-M1	HADRON JETS #240	SELOVE	1,500 HOURS
	DETECTOR DEVELOPMENT #427	YUAN	200 HOURS
-M2	LAMBDA BETA DECAY #361	FONDROM	350 HOURS
	PROTON POLARIZATION #505	YAMIN	100 HOURS
	NUCLEAR CHEMISTRY #529	TURKEVICH	100 HOURS
	NEUTRAL HYPERON #555	DEVLIN	250 HOURS
-M6	PARTICLE SEARCH #469	CUTTS	150 HOURS
	MULTIPARTICLE #523	DZIERBA	800 HOURS
NA-NO-DICHROM	NEUTRINO #355	BARISH	1,400 HOURS
-NO-WB HORN	15-FOOT NEUTRINO/H2GNIZ #489	NEZRICK	300K PIX
	15-FOOT NEUTRINO/D2GNIZ #521	VANDER VELDE	200K PIX
	15-FOOT ANTINEUTRINO/D2GNIZ#539	FRETTER	300K PIX
	15-FOOT ANTINEUTRINO/D2GNIZ#542	CARMONY	500K PIX
	15-FOOT ANTINEUTRINO/D2GNIZ#543	KITAGAKI	400K PIX
	15-FOOT ANTINEUTRINO/H2GNIZ#544	KASTANOV	500K PIX
	15-FOOT NEUTRINO/D2GNIZ #545	SKOW	300K PIX
-NEUTRINO	NEUTRINO #572	DEEDER	6,500 HOURS
-MUON/HADRON	PION DISSOCIATION #318	ASCOLI	400 HOURS
	MUON #348	WILSON	800 HOURS
-15-FT	15-FOOT P - P @ > OR = 300 #208	TAKIBAEV	75K PIX
	15-FOOT PBAR - P @ 100 #526	LANDER	150K PIX
	15-FOOT PBAR - D @ 100 #527	LANDER	150K PIX
	DETECTOR DEVELOPMENT #528	ROBERTS	100 HOURS
	15-FOOT PI- - D @ 100&360 #538	FRETTER	150K PIX
-30-IN	30-INCH HYBRID #394	WHITMORE	2,250K PIX
	30-INCH PI&P - P&NE @100 #504	GULJAMOV	30K PIX
	30-INCH PBAR - D @ 200 #511	FRIDMAN	150K PIX
	DETECTOR DEVELOPMENT #550	ATAC	TEST RUNNING
	30-INCH PI&K - P @ 100 #558	SHEPHARD	2,250K PIX
	30-INCH HYBRID #565	YAMAMOTO	3,000K PIX
	30-INCH HYBRID #570	PLESS	2,000K PIX
PA-PE	PHOTOPRODUCTION #516	NASH	1,000 HOURS
-PC	CHARGED HYPERON #355	ECKLUND	600 HOURS
	FORM FACTOR #446	ECKLUND	800 HOURS
-PW	HADRON-NUCLEON SCATTERING #420	GUIRAGOSSIAN	1,100 HOURS
	PARTICLE SEARCH #537	COX	1,700 HOURS
	NUCLEAR SCALING #569	LEKSIN	250 HOURS
ITA-C-0	PROTON-PROTON SCATTERING #500D	FRANZINI	1,000 HOURS
	QUARK SEARCH #571	OLSEN	300 HOURS

PROPOSALS RECEIVED DURING SEPTEMBER AND OCTOBER 1977

No.	Title	Spokesperson
567	Search for Charm Production in 200 GeV/c Hadron Interactions	R. Cester
568	300 GeV Pion Interactions in Nuclear Emulsion	J. Hébert I. Otterlund
569	A Study of the Nuclear Scaling Phenomenon at High Energies	G. Leksin
570	Proposal for a Study of Particle Production and Dynamics from X = 0 to X = 1 and the Dependence on Incident Quantum Numbers	I. Pless
571	A Proposal to Search for Integer Charged Quarks	S. Olsen
572	Proposal to Assemble a High Resolution - Electron Sensitive - Energy Flow Calorimeter in the NEULAND Spectrometer	D. Reeder H. Williams

DATES TO REMEMBER

November 4, 1977	Workshop and panel discussion on future data acquisition systems at Fermilab, 9 a.m., Curia II (for more information contact A. E. Brenner, Computing Department).
November 10-11, 1977	Fall meeting of the Fermilab Program Advisory Committee.
January 27, 1978	Deadline for receipt of all new proposals and other written materials to be considered at the spring meeting of the Program Advisory Committee and at the Bubble Chamber Subcommittee Meeting.
February 9-10, 1978	Proposal Presentation Meeting.
February 23-24, 1978	Meeting of the Bubble Chamber Subcommittee of the Program Advisory Committee.
March 9-10, 1978	Spring meeting of the Fermilab Advisory Committee.
May 5, 1978	Deadline for receipt of all new proposals and other written materials to be considered at the summer meeting of the Program Advisory Committee.
May 18-19, 1978	Proposal Presentation Meeting.
June 17-23, 1978	Summer meeting of the Fermilab Program Advisory Committee.