

EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH

APPROVED EXPERIMENTS CERN PROTON SYNCHROTRON

October 1969

- Table 1A : PS Counter Experiments in production or starting after shut-down November 1969.  
Table 1B : PS Counter Experiments finished during the PS year (3.10.68-11.10.69)  
Table 2A : Bubble Chamber Experiments and Exposures made in the period 15.6.69 to 11.10.69  
Table 2B : Summary of Bubble Chamber pictures taken during the PS year (3.10.68-11.10.69)  
Fig. 1 : Beam Layout South Hall as in June 1969  
Fig. 2 : Beam Layout East Hall as in June 1969  
Fig. 3 : Beam Layout South-East Hall as in June 1969  
Fig. 4 : Projected Beam Layout in January 1970, South Hall  
Fig. 5 : Projected Beam Layout in January 1970, East Hall

J.V. Allaby  
J.-M. Perreau.

PS COUNTER EXPERIMENTS APPROVED BY THE NPRC  
Table 1A  
EXPERIMENTS IN PRODUCTION OR STARTING AFTER NOVEMBER 1969 (Shut-down)

Area Tgt.	Expt. Code	B e a m		Description of experiment	Authors	Date of Approval by NPRC	Conditions of Approval/ time alloc.	Status (Appr.wks. remaining)
		Code	Description					
South Hall - Target 8	S91	m <sub>8</sub>	Separated $K^{\pm} \leq 2$ GeV/c $\bar{p} \leq 4$ GeV/c $\pi \leq 5$ GeV/c (Separated version of q <sub>8</sub> )	$K^+p, K^-\bar{p}, \bar{p}p$ forward and backward scattering, annihilation of $\bar{p}p$ in 2 $\pi$ 's or 2 K's at small angles. 2 C magnets, on-line wire chambers, gas Čerenkov counter. IBM 1800	CERN-Ec.Poly., PARIS-ORSAY (Acc.Lin.)-STOCKHOLM: Lundby, Mukhin, Baglin, Briandet, Fleury; Davier, Gracco, Lehmann, Morand, Treille; Carlson, Englund, Johansson	4.6.69	8 weeks	Start Dec.1969
	S86	m <sub>8</sub>	Separated $K^{\pm} \leq 2$ GeV/c $\bar{p} \leq 4$ GeV/c $\pi \leq 5$ GeV/c (Separated version of q <sub>8</sub> )	$\bar{p}p \rightarrow \pi^+\pi^-$ at 4 GeV/c. Differential cross section at small values of t and u. Magnet, scintillators, optical spark chambers, Čerenkov counter	PADOVA: Bettini, Brabson, Calvelli, Cittolini, Gasparini, Limentani, Peruzzo, Salandin, Ventura, Voci	11.12.68	Time not yet allocated	Not before completion S 91
	S76	q <sub>7</sub>	Unseparated $\pi, K, p$ < 3.5 GeV/c	$K^{\pm}, \bar{p}$ scattering on polarized protons. Polarized target and counters. IBM 1800	CERN-FOM: Anderson, Erné, Dauw, Lagnaux, Sens, Udo	3.4.68 12.2.69 24.9.69	5 weeks + 12 wks + 12 wks	In Prod. (12 wks)
South Hall - Target 1	S84	d <sub>29</sub>	Unseparated $\pi^{\pm}, K^{\pm}, p^{\pm}$ < 16 GeV/c	Neutral mesonic resonances in $\pi^-p$ at high energies and their neutral decay modes. Liq. H <sub>2</sub> target with localization of interaction. $\gamma$ rays, spark chambers, neutron spectrometer. TR 86	PISA-KARLSRUHE: Bertolucci, Mannelli, Pierazzini, Scribano, Sergiampietri, Vincelli; Abel, Müller, D. Schmitt, Sigurdsson, Staudenmaier	6.11.68 11.12.68 24.9.69	8 weeks	Start Feb.1970
	S96	d <sub>29</sub>	Unseparated $\pi^{\pm}, K^{\pm}, p^{\pm}$ < 16 GeV/c	$\pi^-p$ charge exchange on polarized Butanol target. Spark chamber	SACLAY-DESY: Bonamy, Borgeaud, Crozon, Guillaud, Olivier, Guisan, Ledu, Sonderegger; Bienlein, Dinter, Mango, Paul	24.9.69	4 weeks	Start Dec.1969
	S95	d <sub>29a</sub>	Unseparated $\pi^{\pm}, K^{\pm}, p^{\pm}$ < 16 GeV/c	Test of He <sup>4</sup> target for coherent interaction. Detection of recoiling alpha particles + ETH magnet	CERN-ETH-UPPSALA: Åsberg, Beusch, Dahlgren, Dorell, Ekelöf, Herz, Hoistad, Kullander, Tyrén	4.7.69	4 weeks Parasitic	In Prod. (2 wks.)

PS COUNTER EXPERIMENTS APPROVED BY THE NPRC  
Table 1 A (cont'd)  
EXPERIMENTS IN PRODUCTION OR STARTING AFTER NOVEMBER 1969 (Shut-down)

Area Tgt.	Expt. Code	Beam		Description of experiment	Authors	Date of Approval by NPRC	Conditions of Approval/ time alloc.	Status (Apprx.wks. remaining)
		Code	Description					
South Hall - Target 1	S74	m <sub>7a</sub>	Separated counter beam $\pi$ , K, $\bar{p}$ ; $K < 2.2$ GeV/c $\bar{p} < 3$ GeV/c	High precision measurement on $\Delta S/\Delta Q$ rule. Counters and wire chambers. Varian 620 i.	CERN-ORSAY-VIENNA: Aubert, Bartl, de Bouard, Lepeltier, Massonnet, Niebergall, Pessard, Regler, Steuer, Vivargent, Willitts, Winter, Stier, Yvert	3.4.68 24.9.69	8 weeks (Test) + 8 weeks	In Prod. (8 wks.)
	S83	q <sub>9</sub>	Unseparated $\pi$ , K, p < 3.5 GeV/c	Study of neutral resonances decaying into neutral modes in low mass region. Neutral Missing mass spectrom. spark ch. and scintil. shower detectors, neutron detectors	CERN-BOLCIGNA: Bollini, Dalpiaz, Frabetti, Navach, Massam, Navarra, Schneegans, Zichichi	6.11.68 24.9.69	8 weeks + 1 week until Xmas'69	In Prod. (2 wks.)
	S89	t <sub>1</sub>	Unseparated $\pi$ , K, p test counter beam $\leq 1$ GeV/c	Strangeness +1 missing mass in $\pi^- p \rightarrow \Delta^0 + M$ . Scintillators, spark chambers, water Cerenkov counter. Tests of apparatus-logics	University of Rome: Bizzari, Dore, Guidoni, Laakso, Marini, Martellotti, Marsa, Pistilli	12.2.69	Tests	Start Dec. 1969
East Hall	S92	s <sub>5</sub>	High energy spectrometer line derived from e <sub>5</sub> the experiment's target being in the e <sub>5</sub>	High energy p-p two-body reactions. 60 m long magnetic spectrometer. Scintillation counters. HP 2116A	Allaby, Diddens, Dobinson, Klovning, Schlüpmann, Wetherell	4.6.69	10 weeks	Start Jan. 1970
	S93		Short neutral beam of the b <sub>13</sub> type derived from e <sub>3</sub> with a vertical septum	$\Phi_{\pi^+ \pi^-}$ measurement, by time dependence of $K^0 \rightarrow \pi^+ \pi^-$ and of the charge asymmetry in leptonic decav. Charnak chambers, wide gap magnet, large H <sub>2</sub> Cerenkov	CERN-HEIDELBERG: Kleinknecht, Steffen, Steinberger, Filthuth, Luth, Mockry, Vannucci, Tripper, Wahl, Zech	4.6.69	Provided satisfactory beam layout is found	Start Autumn 1970
	S90	p <sub>5</sub>	Unseparated $\pi^+$ , $K^+$ , $p^+$ < 18 GeV/c, produced from slow ej. proton beam e <sub>5</sub>	Magnetic boson spectrometer for masses from 4-8 GeV. Wide gap magnet and wire chambers. IBM 1800. Tests for a Serpukhov experiment	Baud, Benz, Blumenfeld, Botterill, Damgaard, Nef, Focacci, Kienzle, Klanner, Lechanoine, Martin, Lecompte, Roinischvili, Weitsch	23.4.69	4 weeks	Start Jan. '70

PS COUNTER EXPERIMENTS APPROVED BY NPRC  
Table 1 A (cont'd)

EXPERIMENTS IN PRODUCTION OR STARTING AFTER NOVEMBER 1969 (Shut-down)

Area Tgt.	Expt. Code	Beam		Description of experiment	Authors	Date of Approval by NPRC	Conditions of Approval / time alloc.	Status (Appx wks. remaining)
		Code	Description					
Slow Ejection 62 - East Hall	S94	p <sub>5</sub>	Unseparated $\pi^{\pm}, K^{\pm}, p^{\pm}$ <18 GeV/c, produced from slow ej. proton beam e <sub>5</sub>	$\pi^{\pm} p \rightarrow \pi^{\pm} \pi^{\pm} n, K^{\pm} K^{\pm} n$ , effective mass measurement. Large magnet, wire chambers, PDP9 computer	CERN-MUNICH: Blum, Dietl, Hyams, Koch, Lorenz, Lütjens, Männer, Mittner, Stierlin, Weilhammer	24.9.69	8 weeks	After completion S90
	S59	p <sub>4</sub>	Unseparated $\pi^{\pm}, K^{\pm}, p^{\pm}$ < 18 GeV/c, produced from slow ej. proton beam e <sub>5</sub>	Measurement on the parameter P <sub>0</sub> in $\pi^{\pm} p, K^{\pm} p, p^{\pm} p$ scattering, using a transversally polarized target and counter hodoscopes, IBM 360-44	CERN-GRSAY-PISA: Borghini, Dick, di Lella, Navarro, Olivier, Reibel; Coignet, Grégoire, Poulet, Cronenberger, Silloy, Michalowics, Kuroda; Bellettini, Braccini, Del. Prete, Foà, Valdata, Sanguinetti	8.12.68 3.4.68 23.4.69 24.9.69	8 weeks + 6 wks + 6 weeks	In Prod. (6 wks.)
	S82	b <sub>17</sub>	Neutral beam derived from e <sub>5</sub>	Accurate determination of ratio $\eta_{00} / \eta_{+-}$ . Wire spark chambers and lead glass Čerenkov counters. IBM 1800	CERN-AACHEN-TORINO: Darriulat, Deutsch, Ferrero, Grosso, Holder, Pilcher, Rubbia, Sciré, Staude, Radermacher, Tittel	6.11.68 4.6.69 24.9.69	3 weeks (tests) + 8 weeks	Start Jan. 1970 (8 wks.)
East Hall	P6	k <sub>12</sub>	Low energy K meson beam with energy loss separation derived from slow ej. beam e <sub>5</sub>	Investigation of hypernuclear gamma rays	CERN-HEIDELBERG-WARSAW: Bamberger, Lynen, Piekarz, Piekarz, Pniewski, Povh, Ritter, Sepp, V. Soergel	4.6.69	Not decided	Start after sh-d. 1969
	P7			Study of K mesic atoms	CERN-KARLSRUHE-HEIDELBERG: Backenstoss, Bunaciu, Charalambus, Egger, Hamilton, Koch, Povel, Schmitt, Springer	4.6.69	Not decided	Start after sh-d. 1969
?	S97		$\pi$ beam produced from fast ejected protons	Test of QED by precise measurement of g-2. Large muon storage ring with electrostatic focusing	Bailey, Bassompierre, Farley, Hattersley, Combley, Picasso, Wickens	24.9.69		Start 1973

## PS COUNTER EXPERIMENTS APPROVED BY NPRC

Table 1B

EXPERIMENTS FINISHED DURING THE PS YEAR 3.10.1968 TO 11.10.1969

Expt. Code	Beam		Description of experiment	Authors	Date of Approval	Date of Completion	Total Nr. of weeks	Status
	Code	Description						
S62	d <sub>28</sub>	Unseparated negative beam, 30 GeV/c	Search for charge $-3/2$ e particles, produced from an internal target. Method: Counters and large gap spark chambers	Allaby, Diddens, Dobinson, Gygi, Klovning, Sacharidis, Schneider, Schlüpmann, Wetherell	8.2.67	Dec. 1968	6	Submitted for publication
S75	m <sub>7</sub>	Separated counter beam $\pi$ , K, $\bar{p}$ ; $K \leq 2.2$ GeV/c $\bar{p} \leq 3$ GeV/c	$K^+ p \rightarrow \bar{K}^0 n$ total cross sections. Detectors: Scintillation counters and lead sandwiches	CERN-CAEN-SACLAY: Bricman, Ferro-Luzzi, Seguinot, Declais, Perreau, Valladas, Bizard, Duchon	3.4.68 6.11.68	Dec. 1968	4 + 2	Completed
S71	b <sub>13</sub>	Neutral beam derived from e <sub>5</sub>	$K^0$ leptonic and $3\pi$ decays. Wire spark chamber and Čerenkov counter. IBM 1800	CERN-AACHEN-TORINO: Bisi, Cavallarin, Deutsch, Foeth, Darriulat, Ferrero, Grosso, Kleinknecht, Rubbia, Staude, Tittel	7.2.68 3.7.68	Jan. 1969	4	Analysis
S79	q <sub>6</sub>	Unseparated $\pi$ , K, p < 3.5 GeV/c	$\Lambda$ - $\beta$ decay. Spark chambers and Čerenkov counters	HEIDELBERG: Heintze, Heard, Mundhenke, Soergel, Wagner, R.M. Brown, Freytag, Rieseberg	8.5.68 25.9.68 12.2.69	May 1969	11	Analysis
S88	b <sub>13</sub> / b <sub>17</sub>	Neutral beam derived from e <sub>5</sub>	Interference of $K_1^0 \rightarrow \pi^+ + \pi^-$ with $K_2^0 \rightarrow \pi^+ + \pi^-$ from $K^0$ decay and determination of $K_L^0 - K_S^0$ mass difference. Detectors: Spark chambers, magnetic analysis of $\pi^+ + \pi^-$ . Regenerators: Cu, Pb	CERN-AACHEN-TORINO: Bisi, Böhm, Foeth, Darriulat, Ferrero, Grosso, Kaftanov, Kleinknecht, Lenhart, Lynch, Rubbia, Sandweiss, Staude, Tittel	12.2.69	May 1969	3	Published
S80	b <sub>14</sub>	$K^0$ beam derived from e <sub>5</sub>	Rate of $K_{L,S}^0 \rightarrow 2\pi^0$ . Heavy plate spark chambers	J.M. Gaillard, Cholley, Jane, Repellin, Ratcliffe, Schubert, Wolff	8.5.68 11.12.68	July 1969	8	Analysis
S78	p <sub>5</sub>	Unseparated $\pi^+$ , $K^+$ , $\rho^+$ < 18 GeV/c, produced from slow ej.proton beam e <sub>5</sub>	Magnetic boson spectrometer for masses from 2-5 GeV. Wide gap magnet and wire chambers. IBM 1800	Benz, Baud, Bosnjakovic, Botterill, Damgaard, Nef, Focacci, Kienzle, Klanner, Lechanoine, Martin, Schubelin, Weitsch	3.4.68 8.5.68	July 1969	10	Analysis

PS COUNTER EXPERIMENTS APPROVED BY NPRC  
Table 1B (cont'd)  
EXPERIMENTS FINISHED DURING THE PS YEAR 3.10.1968 TO 11.10.1969

Expt. Code	R e a m		Description of experiment	Authors	Date of Approval	Date of Completion	Total Nr. of weeks	Status
	Code	Description						
S81		Inside PS ring	Background measurement at the PS, study of the ISR background problems. Scintillators, optical spark chamber	Hyams, Agoritsas	25.9.68 4.6.69	Shut-down 1969	24 hrs.	Finished
S70	q <sub>8</sub>	Unseparated $\pi$ , K, p < 5 GeV/c	A study of the modes $K^{\pm} \rightarrow \pi^{\pm} \pi^0 \gamma \pi^{\pm} \pi^0 \pi^0$ . Spectrometer magnet and wire chambers. Honeywell DDP 516 computer	GLASGOW-LIVERPOOL-OXFORD-RHEL: Booth, Duke, Evans, Hill, Holley, D. Jones, P. Jones, Morris, Renshall, Salmon, Smith, Thomas, Thresher, Williams	4.10.67 3.4.68 23.4.69	Shut-down 1969	17	Analysis
S72	b <sub>16</sub>	Neutral beam at $0^{\circ}$	Elastic np charge exchange scattering above 6 GeV/c. Wire spark chambers and counters. CDC 1700	CERN-KARLSRUHE: Engler, Horn, Mönning, Runge, Schlüdecker, Schmidt-Parzefall, Schopper, Siebers, Ullrich	3.4.68 23.4.69	Shut-down 1969	14	Analysis
S77	d <sub>29</sub>	Unseparated $\pi^{\pm}$ , $K^{\pm}$ , $p^{\pm}$ < 16 GeV/c	$\pi$ , d elastic scattering. Wire spark chambers	CERN-TRIEST: Bradamante, G. Fidecaro, M. Fidecaro, Giorgi, Penzo, Piemontese, Sauli, Palazzi, Schiavon, Vascotto	3.4.68 4.6.69	Shut-down 1969	4 parasite + 6	Analysis
S73	d <sub>29a</sub>	Unseparated $\pi^{\pm}$ , $K^{\pm}$ , $p^{\pm}$ < 16 GeV/c	Coherent production by $\pi$ and Coulomb dissociation by Kaons. Magn. Spark chambers. Charpak chambers. SDS 920 computer	CERN-ETH.-I.C.: Astbury, Bellini, Bemporad, Beusch, Dufey, Codling, Freudenreich, Frosch, Gentit, Lee, Letheren, Mühlmann, Melissinos, Polgar, Pepin, Vegni, Websdale	3.4.68	Shut-down 1969	4	Analysis
S65	d <sub>29a</sub>	Unseparated $\pi^{\pm}$ , $K^{\pm}$ , $p^{\pm}$ < 16 GeV/c	Neutral final states in $\pi^- p$ interactions. Optical spark chambers in magnet. Charpak chambers. SDS 920 computer	CERN-ETH-IC: Astbury, Bellini, Bemporad, Beusch, Dufey, Codling, Freudenreich, Frosch, Gentit, Lee, Letheren, Mühlmann, Melissinos, Polgar, Pepin, Vegni, Websdale, Michelini	10.5.67 11.12.68	Shut-down 1969	4 parasite	Analysis

PS COUNTER EXPERIMENTS APPROVED BY MPRC  
Table 1B (cont'd)  
EXPERIMENTS FINISHED DURING THE PS YEAR 3.10.1968 TO 11.10.1969

Expt. Code	B e a m		Description of experiment	Authors	Date of Approval	Date of Completion	Total Nr. of weeks	Status
	Code	Description						
S68	$m_{7a}$	Separated counter beam $\pi$ , K, $\bar{p}$ ; $K \leq 2.2$ GeV/c $\bar{p} \leq 3$ GeV/c	$K_{e4}$ decay. Čerenkov counter and magn.analysis of the 3 charged decay particles. IBM 1800	GENEVA-SACLAY: Bourquin,Boymond, Extermann,Mermod,Suter; Basile,Bréhin, Diamant-Berger, Kunz, Lemoine, Turley, Zylinderstein	16.8.67 3.4.68 4.6.69	Shut-down 1969	14	Analysis
S87	$t_1$	Unseparated $\pi$ , K, p, test counter beam $\leq 1$ GeV/c	$\pi^- p \rightarrow \pi^+ \bar{n}$ , $K^+ K^- n$ , effective mass measurement. Large magnet, wire chambers. PDP9 computer. Test of apparatus	CERN-MUNICH: Dietl, Hyams, Koch, Lorenz, Lütjens, Männer, Mittner, Stierlin, Weilhammer	8.5.68	Shut-down 1969	14	Test completed. Exp. (S84) approved, P5 beam
S54	$p_3$	Unseparated $\pi^+$ , $K^+$ , $p^+$ < 18 GeV/c, produced from slow ej. proton beam $e_5$	Measurements of parameters A and R in $\pi$ -p scattering, using a polarized target and a spark chamber. CAE 9010	SACLAY: Amblard, Cozzika, Deregel, Ducros,Fontaine, Hansroul, Autones, de Lesquen, Merlo, Movchet, Rioubland, van Rossum	11.5.66 8.3.67 3.4.68 23.4.69	Shut-down 1969	22.5	Analysis
S85	$p_5$	Unseparated $\pi^+$ , $K^+$ , $p^+$ < 18 GeV/c, produced from slow ej. proton beam $e_5$	Study of spin and parity of A2 (low and high). Wide gap magnet and wire chambers. IBM 1800	Benz, Baud, Bosnjakovic, Botterill, Damgaard, Nef, Focacci, Kienzle, Klanner, Lechanoine, Martin, Schubelin, Weitsch	11.12.68	Shut-down 1969	5	Analysis

BUBBLE CHAMBER EXPERIMENTS APPROVED BY NPRC  
Table 2A  
AND EXPOSURES MADE IN THE PERIOD 15.6.69 TO 11.10.69

Expt. Code	Beam and Chamber	Expt. beam	Summary	Groups	Approved Date kpx	Taken before 15.6.69	Additional approval Date kpx	Taken in period kpx
T155	k <sub>8</sub> Electrostat. separated beam K <sup>±</sup> 1.2- 2 GeV/c, HBC 200, H <sub>2</sub>	K <sup>+</sup> , 1.2- 1.8 GeV/c	Prod. of 300.000 K <sup>0</sup> of well-known momentum to study $\Delta Q/\Delta S$ , using lept. decay; $K_1^0 \rightarrow \pi^+ \pi^- / K_1^0 \rightarrow \pi^0 \pi^0$ ; K <sup>0</sup> lifetime; secondary interact. of K <sub>1</sub> <sup>0</sup> ; the 3-body reaction $K^+ p \rightarrow K^0 p \pi^+$ (100.000 events) and the decay of $K^+ \rightarrow \pi^+ \pi^+ \pi^-$ (100.000 events)	CERN, Saclay	6.12.67 500	428 (70bad)		0
T145	m <sub>6</sub> Electrostatic separated beam 2-5 GeV/c HBC 200, H <sub>2</sub>	$\bar{p}$ , 4.5 GeV/c	Continuation of the study of meson states found in 6-prong annihilations at 2.5 GeV/c	Athens, Liverpool	23.4.69 200	0		220
T168		K <sup>-</sup> , 2-2.8 GeV/c	Systematic study of K <sup>-</sup> p interaction at 5 momenta between 1.95 and 2.35	Collège de France, Saclay	23.4.69 200	0		229
T112		K <sup>-</sup> , 3.6 GeV/c	Mécanismes de production, extension des statistiques sur les propriétés des résonances (états finals $Y^* \pi$ , $\Delta^0$ boson neutre, $KK^*$ ). Production de $\Xi$	Oxford	23.4.69 200	0		251
		K <sup>-</sup> , 4.2 GeV/c		Amsterdam, Nijmegen	23.4.69 200	0		238
T200	$\pi^-$ , 3.9 GeV/c	Analysis of $A_2 \rightarrow K \bar{K}, \eta \pi$ , and $3 \pi$ production as function of momentum transfer. E <sub>0</sub> and D <sub>0</sub> properties	CERN, Saclay			222	4.6.69 200	214
T154	k <sub>10</sub> Electrostatic separated beam K <sup>±</sup> .8-1.8 GeV/c HBC 81	$\bar{p}$ , .4- 1.2 GeV/c	Investigation of $\bar{p}p$ annihilation at an intermediate energy because of striking differences between meson resonances produced in annihilations at rest and at 1.2 GeV/c. Attempt to understand both the new resonances observed and the $\bar{p}p$ annihilation mechanism	Collège de France	8.11.67 50 3.4.68 300 3.7.68 200	567	23.4.69 350	589



BUBBLE CHAMBERS EXPERIMENTS APPROVED BY NPRC  
Table 2A(cont'd)  
AND EXPOSURES MADE IN THE PERIOD 15.6.69 TO 11.10.69

Expt. Code	Beam and Chamber	Expt. beam	Summary	Groups	Approved Date kpx	Taken before 5.6.69	Additional approval Date kpx	Taken in period kpx
T133	k <sub>11</sub> Electrostatic separated beam K <sup>±</sup> 0.8-1.26GeV/c HLBC 120	K <sup>-</sup> , 0.8-1.2 GeV/c	Systematic research of Y <sub>0</sub> <sup>*</sup> using $\Sigma^0 \pi^0$ and $\Lambda^0 \pi^0 \pi^0$ channels. Study of $\Lambda^0 \eta$ and $\Sigma^0 \eta$ systems. Study of radiative decay of $Y^* \rightarrow \Delta^0 \gamma$	CERN, Bergen, Ec.Poly., Orsay, Turin	5.6.68 625	743	4.6.69 * 365	0
T134		K <sup>+</sup> , stopped	Precise study of the K <sub>e3</sub> branching ratio and energy dependence of the form factor f <sup>+</sup> in the K <sub>e3</sub> decay mode. Furthermore, additional data will be obtained on the K <sub>μ3</sub> mode	Aachen, Bari, Brussels, CERN	3.7.68 500	180		283
T160		$\bar{p}$ , .7-.85 GeV/c	Study of $\bar{p}p \rightarrow 3\pi^0 \rightarrow \pi^+ \pi^- + n\pi^0$ , $K_S^0 K_L^0 \pi^0$ , $K_S^0 K_L^0 \pi^0$ , $\pi^+ \pi^- \pi^0$ , $\pi^+ \pi^- \pi^0 \gamma$ and $2\pi^+ 2\pi^- \gamma$	Collège de France, Ec.Pol.	4.6.69 40	15		22
T165		K <sup>-</sup> , stop (propane)	Measurement of the $\Delta$ hyperon trapping probability and the K <sup>-</sup> non mesonic interact.yield in propane. Comparison w. similar expts in Nucl.Emuls.CF3BR, and He	Brussels, UC London	4.6.69 10	0		18
T166		K <sup>-</sup> , stop (in targets)	A study of secondary products emitted when K <sup>-</sup> mesons come to rest in plates of various materials in a heavy liquid bubble chamber enable the ratios of neutron to proton concentration in the nuclear periphery to be inferred.	UC London	23.4.69 75	0		139

\* Only if possible before Shut-down 1969.

BUBBLE CHAMBER EXPERIMENTS APPROVED BY NPRC  
Table 2A (cont'd)  
AND EXPOSURES MADE IN THE PERIOD 15.6.69 TO 11.10.69

Expt. Code	Beam and Chamber	Expt. beam	Summary	Groups	Approved Date kpx	Total before 5.6.69	Additional approval Date kpx	Taken in period
T170	k <sub>10</sub> / k <sub>13</sub> Electrostatic separated beam $\geq .6$ GeV/c HBC 81	$\bar{p}$ .7 GeV/c	Analysis of the properties of $A_2 \rightarrow K \bar{K}$ (splitting), $F_1$ (1540), $S^*$ (1050), and other $K\bar{K}$ threshold effects, $D_0$ (1285) in the process $\bar{p}p \rightarrow D\rho$ , $E(1420)$ in the process $\bar{p}p \rightarrow E_0 \pi^0$	CERN, Collège de France	24.9.69 1500	0		520
T175		$K^-$ .6 - .8 GeV/c	$K^+p$ and $K^+n$ interactions between 600 and 800 MeV/c incident momentum. With these two complementary experiments the strange hyperon resonances in the mass region between 1600 and 1700 MeV will be studied with a significant increase in the statistical precision	CERN-Heidelberg	24.9.69 800	0		0
T176	k <sub>13</sub> Electrostatic separated beam .6 - 1 GeV/c DBC 81	$K^+$ .65 - 8 GeV/c	Formation experiment to investigate a new structure in the total cross section of the $K^+N$ interaction in the state of l-spin zero	Bologna, Glasgow, Rome, Trieste	24.9.69 800	0		0
T171						24.9.69 160	0	

## BUBBLE CHAMBER EXPERIMENTS APPROVED BY NPRC

Table 2 B

## SUMMARY OF BUBBLE CHAMBER PICTURES TAKEN IN LAST PS YEAR

Shut-down 1968 (3.10.68) to Shut-down 1969 (11.10.69)

Expt. Code	Chamber	B Beam	Experiment	Collaborators	Total pict. taken (kpct.)
T 82	HBC 200	p 19	Two-body reactions and strange particle production	Copenhagen, Helsinki, Oslo, Stockholm	429
T106	HBC 200	$\pi^+$ 16	High-energy $\pi^+$ interactions	Aachen, Berlin, Bonn, CERN, Heidelberg, Krakow, Warsaw	300
T109	HBC 200	$K^-$ 14.3	High mass resonances	Ecole Poly., RHEL, Saclay	392
T112	HBC 200	$K^-$ 3.6	Production of $Y^*, \Delta^0, X^0, NK^* + \bar{K}$	Oxford	251
		$K^-$ 4.2		Amsterdam, Nijmegen	238
T133	HLBC 120	$K^-$ 0.8-1.2	Systematic research of $Y_0^*$ etc.	CERN, Bergen, Ecole Poly., Orsay, Turin	743
T134	HLBC 120	$K^+$ stop	$K_{e3}$ branching ratio	Aachen, Bari, Brussels	463
T137	DBC 81	$K^+$ 0.9-1.4	Structures in total cross sect.	Bologna; Glasgow, Rome, Trieste	159
T139	HBC 200	$K^-$ 8.25	Study of strange resonances	Athens, Bologna	255
T143	HBC 200	$\pi^-$ 9	Study of two and three pion syst.	Bari, Bologna, Florence	261
T145	HBC 200	$\bar{p}$ 4.5	Annihilations into 6-prongs	Athens, Liverpool	220
T147	DBC 81	$\bar{p}$ 1.2-1.4	$\bar{p}n$ interactions	Bologna, Padua, Pisa, Turin	265
T148	HBC 200	$K^+$ 16	Resonance production at high energies	Birmingham, Brussels, CERN, IPN Paris, Saclay	300
T154	HBC 81	$\bar{p}$ 0.4-1.2	$\bar{p}p$ annihilation in flight	Collège de France	589
T158	HBC 200	p 24	Study of pp interactions	Bonn, Hamburg, Munich	129
T159		p 12			186
T160	HLBC120	$\bar{p}$ 0.7-0.85	$\bar{p}p$ annihilations	Collège de France, Ecole Poly.	37
T163	HBC 81	$K^-$ 1.1-1.4	Phase-shift analysis of $K^-p$	CERN, Heidelberg, Saclay	420
T164	HBC 200	$K^-$ 10	$K^-$ interactions at high energy	Aachen, Berlin, CERN, Imp.Coll., Vienna	217
T165	HLBC120	$K^-$ stop (in propane)	$\Delta^-$ hyperon trapping probability	Brussels, U.C. London	18
T166	HLBC120	$K^-$ stop (in tgts)	Study of nuclear periphery	U.C. London	139
T168	HBC 200	$K^-$ 2.0 - 2.8	Energy dependence of $K^-p$ interactions	Collège de France, Saclay	229
T170	HBC 81	$\bar{p}$ 0.7	$\bar{p}p$ annihilations in flight	CERN- Collège de France	520
T200	HBC 200	$\pi^-$ 3.9	$A_2^* \rightarrow K\bar{K}, \eta\pi, 3\pi$	CERN, Saclay	214

BUBBLE CHAMBER EXPERIMENTS APPROVED BY NPRC

Table 2B (cont'd)

SUMMARY OF BUBBLE CHAMBER PICTURES TAKEN IN LAST PS YEAR  
Shut-down 1968 (3.10.68) to Shut-down 1969 (11.10.69)

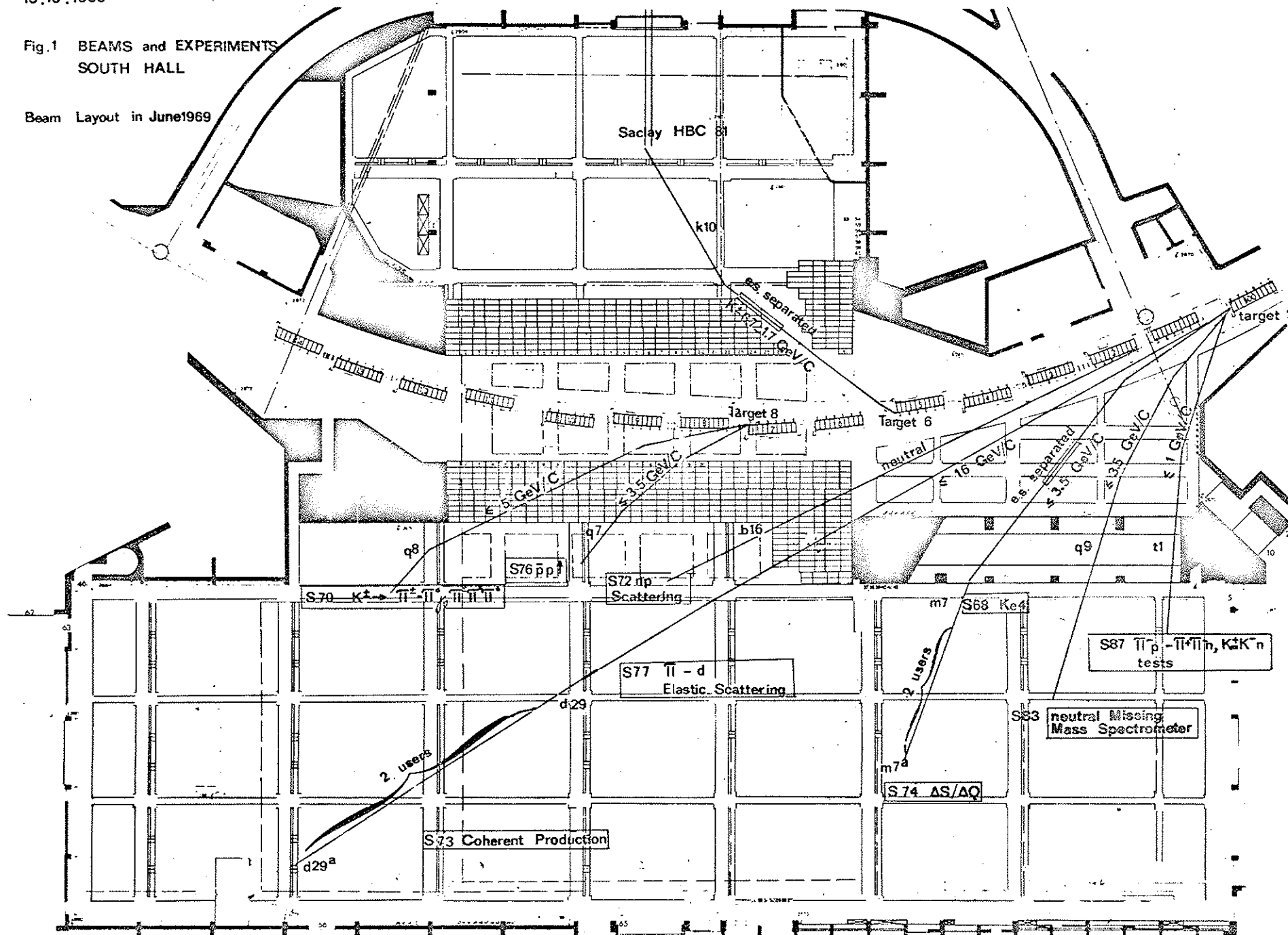
TOTAL PER CHAMBER	HBC 81	1529
	DBC 81	424
	HBC200	3621
	HLBC120	1400
	GRAND TOTAL	6974 kpx

CPS/EXP/16

15.10.1969

Fig.1 BEAMS and EXPERIMENTS  
SOUTH HALL

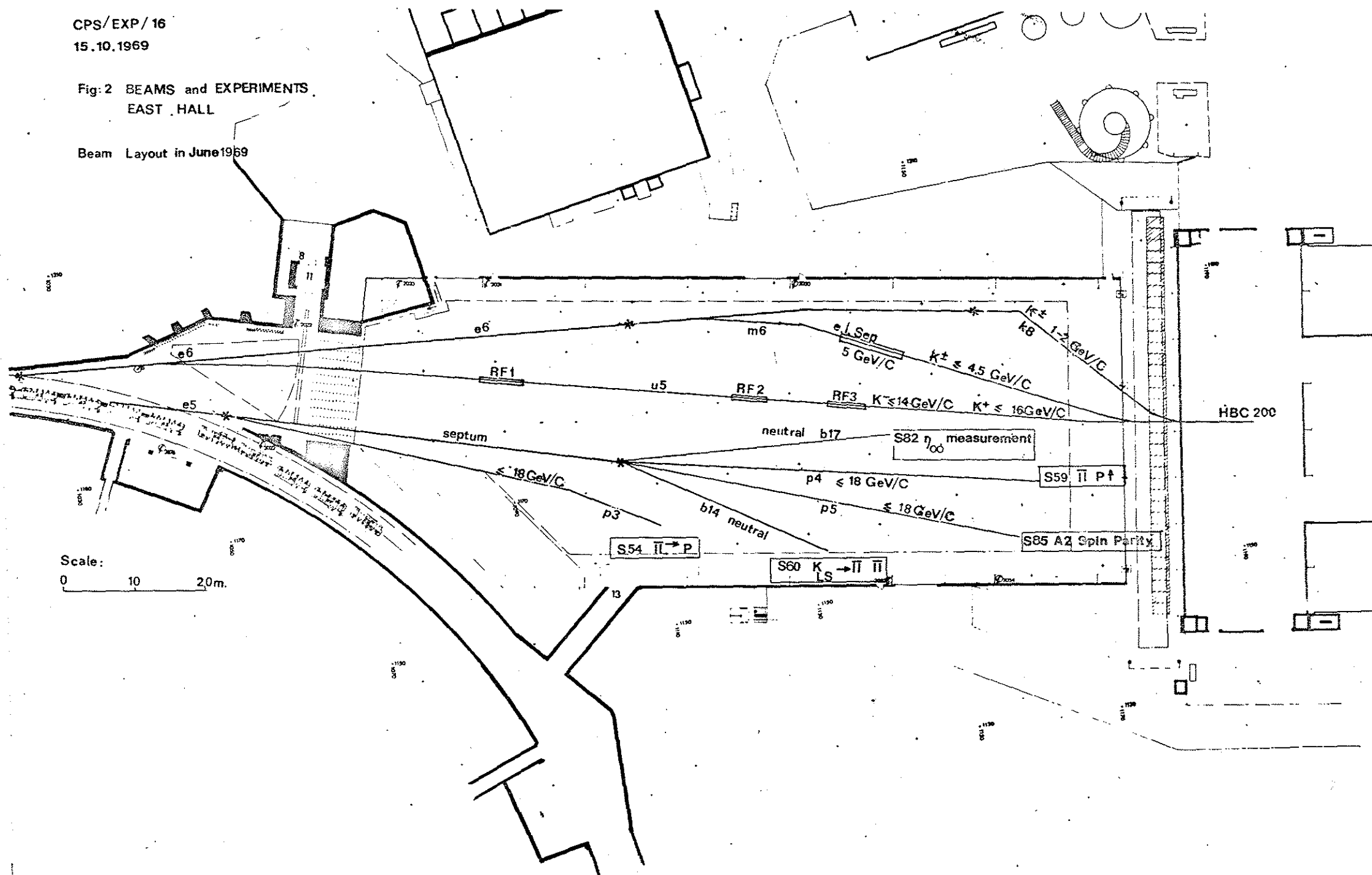
Beam Layout in June 1969



CPS/EXP/16  
15.10.1969

Fig: 2 BEAMS and EXPERIMENTS  
EAST HALL

Beam Layout in June 1969



Scale: 0 10 20m.

CPS/EXP/16

15.10.1969

Fig.3 BEAMS and EXPERIMENTS

SOUTH - EAST HALL

BEAM LAYOUT in June 1969

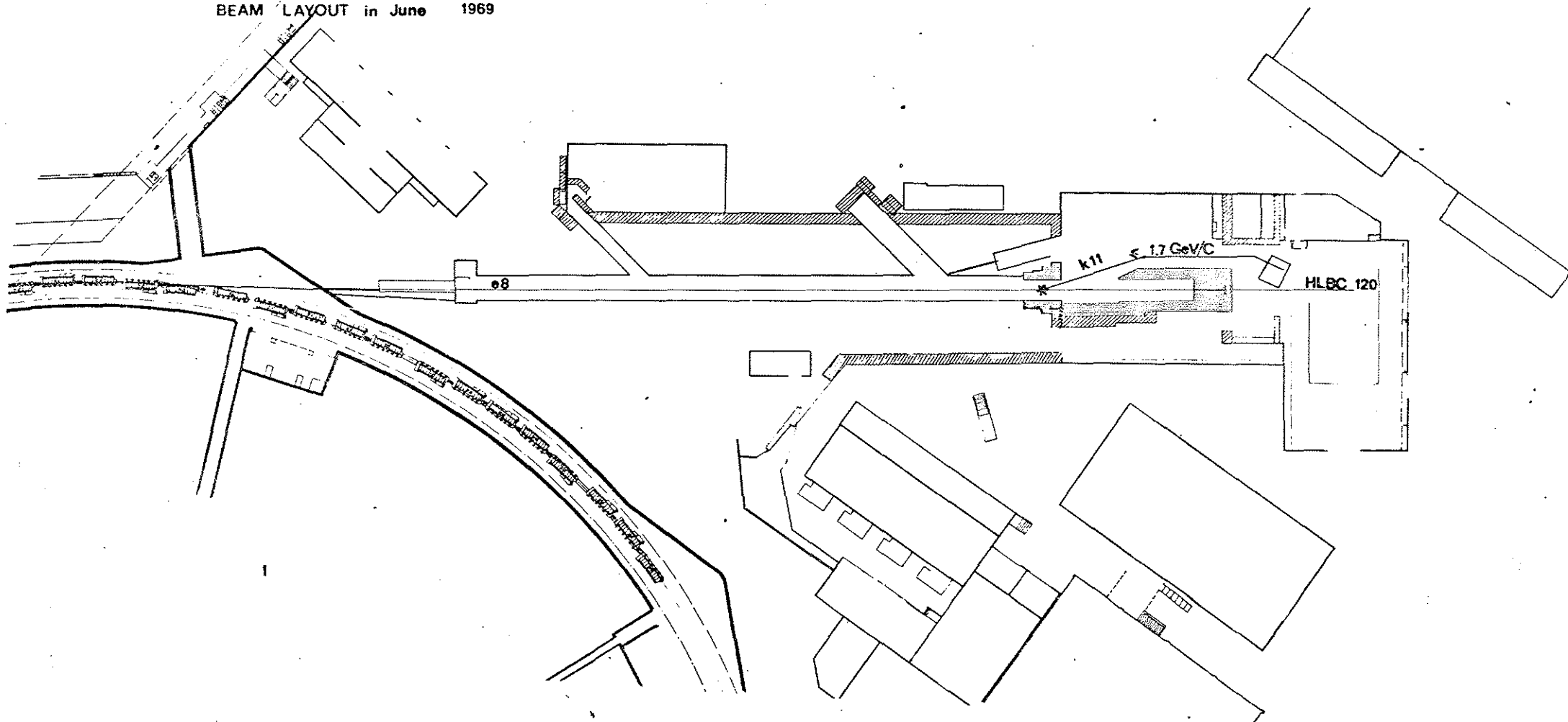


Fig.4 BEAMS and EXPERIMENTS  
SOUTH HALL

Projected  
Beam Layout in Jan.1970

