JADE LOGBOOK VII Runs 8290 – 9647

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JADE LOG Book

Nr. VII

RUNS 8290 – 9648

30/7/81

0·00 BAMFORD, GLENDENNING, Zhang all on shift

0·01 New log book needed

0·30 PKR having problems with LINAC II, shut back for ~10 mins.

1·40 Start run 8290. Calibration NW in

2:00 Positrons lost. Jet chamber tripped. PKR injection.

2·10 Beams dumped.

2:35 Start Run 8291

6·15 We ask for a new fill

6·20 Beams dumped.

7·01 Start run 8296

7·10 After a good start to the run, background wire, discrim strikes on the beam pipe monitor shoots off the scale. Phone PKR. they say they will optimise for us.

7·25 Some positron current lost, 1D trip.

7·30 Multiple IDAS errors on subevent 602. Hippo no' to the question do you want to stop the run or not and the error goes away (hopefully).

8.00 W. Bartel & R. Barlow on shift

Problem with V34 no response from: 17, 19, 21, 23, 25, 27, 29, 31 resulting in a hole in the jet chamber wire map. call Kawabata wires 128-256 are dead.
however we continue data taking under these conditions.
Runs: #8296, #8297, #8298
for safety we restart NORD. We are getting now IBD-error. Time out on PKR IBD-link down
Reload - use old N50 program. ← Why?
(Camac-branch) Cable Tightened — Jet chamber wires were back.

9[29] Restart servers data taking

10[10] Checked Standard Histograms. All OK.

10[40] Beams Lost

11[35] New fill.

11[50] Beams Lost. Luminosity given for this run (8304) is obviously silly so not corrected.

12" New fill.

RUN	DATE	START	STOP	I^+	I^-	DEAD TIME (%)	TIME (SECS)	RECORDS OUT	ALL TRIGGERS $\times 10^6$	T0 REJECT $\times 10^6$	T0 ACCEPT $\times 10^6$	T1 ACCEPT + POSTPONE $\times 10^6$	T2 ACCEPT	T3 ACCEPT	T2 3TOR 3TR.	T2 COLLIN	T2 $\geq$2TOR 4>1 >2TR.	T1 LG>4
8290	30/7/81	1:40	2:00	5.81	6.2	9.4	1045	2987	272	25.5	247	6.0	1553	74	—	942	212	10499
8291	30/7/81	2:35	3:24	5.4	5.9	8.9	2862	7813	745	66.0	679	15.4	4014	196	—	2578	534	26925
8292	30/7/81	3:24	4:14	5.0	5.5	9.1	2942	7714	765	68.5	696	14.6	3903	182	—	2598	500	26732
8293	"	4:14	5:06	4.7	5.2	8.1	3102	7810	809	65.5	741	14.5	4008	162	—	2649	503	27254
8294	"	5:06	6:01	4.4	4.8	7.7	3265	7800	850	65.7	784	14.2	3889	169	—	2669	440	25569
8295	"	6:02	6:22	4.3	4.7	7.0	1199	2866	312	21.9	290	5.0	1485	66	—	1011	162	8863
8296	30/7/81	7:01	7:38	5.3	6.0	13.9	2643	7829	687	95.2	592	15.7	4696	206	—	2576	954	27752
8297	"	8:00	8:43	4.9	5.7	10.0	2577	7841	676	67.5	608	15.8	4255	170	—	2565	687	24839
8298	"	8:44	8:57	4.9	5.6	9.2	431	1172	112	10.3	102	2.2	617	21	—	382	108	3656
8301	"	9:27	9:28	4.6	5.4	17.3	40	128	10	1.8	9	0.2	67	2	—	44	8	815
8302	"	9:29	10:19	4.4	5.1	7.9	2995	8002	778	614	718	13.7	4181	171	—	2727	598	25443
8303	"	10:22	10:34	4.3	5.1	7.0	954	2111	298	17.3	231	3.7	1111	45	—	811	87	7742
8304	"	11:36	11:46	6.7	3.9	18.5	374	1750	97	18.0	79	2.3	570	36		318	100	9897
8305	"	12:12	12:53	6.0	6.0	9.8	2466	7852	642	63.2	578	14.2	3955	182	—	2338	723	31314
8306	"	12:57	13:23	5.8	5.8	9.8	1538	4682	400	39.3	361	8.1	2199	119	—	1405	376	17834
8307	"	13:25	13:29	5.7	5.7	14.2	40	144	10	1.4	8.8	0.2	62	1	—	46	7	3564
8308	"	15:02	15:36	5.8	5.8	13.6	2045	7887	532	72.5	460	12.1	3195	149	—	1902	591	32046
8309	"	15:36	16.21	5.5	5.3	11.2	2474	7840	644	72.2	572	15.8	3991	220	—	2362	675	33535
8310	"	16:22	16:53	5.2	4.9	9.6	1715	5055	446	42.7	403	9.7	2505	115	—	1560	389	30357
8311		no data																
8312	"	17:1	17,47	4.9	4.5	11.4	2482	7834	646	73.6	572	15.4	4202	221	—	2228	778	30335
8313	"	17:47	18:40	4.6	4.2	7.6	3115	7801	810	61.9	748	13.8	4140	158	—	2653	724	19082
8314	"	18.40	A:30	4.3	3.9	7.3	2964	6887	771	55.9	715	11.5	3854	147	—	2537	650	17701
8315	"	20:01	20:40	5.9	5.9	12.4	2297	2862	598	74.1	524	16.8	4572	241	—	2465	882	20575
8316	"	20:40	21.27	5.5	5.5	9.3	2768	7808	720	67.1	653	15.4	4185	192	—	2597	614	21131
8317	"	21:27	21:50	5.4	5.3	9.0	1343	3652	350	31.4	318	6.9	1895	98	—	1250	251	9632
8318	"	21.51	22:21	6.2	5.1	8.9	1783	4899	456	40.7	415	8.7	2527	90	—	1624	369	13035
8319	"	22:22	23:12	4.8	4.8	8.1	3009	7817	782	63.2	719.	13.5	4148	160	—	2713	575	20757
8320	"	23:13	23:22	4.8	4.7	8.3	525	1295	136	11.3	125.	2.3	663	40		414	99	3410
8321	31/7/81	0.01	0.42	6.24	6.50	10.3%	2495	7848	648,9	66,6	582,3	17,7	4134	229		2328	582	Forget it
8322	"	0.43	1.26	5.87	6.13	9.6	2584	7831	671.9	64.6	607.3	17.6	4262	227		2604	475	
8323	"	1.27	2.12	5.54	5.77	8.7	2734	7824	711.8	61.7	650.1	16.6	4029	186		2525	525	
8324	"	2.13	2.30	5.21	5.42	8.8	857	2388	233.0	19.7	203.3	5.3	1218	59		757	152	
8325	"	5.40	6.20	6.15	6.20	13.1	2319	7873	603.2	79.3	523.9	19.6	4504	282		2426	643	

T1 LUMI	<L> $\times 10^{30}$	$\int L dt$ RUN	$\int L dt$	IBM/TAPE	BEAM PIPE (V)	REJECT EVENT FRACTION (%)	# BHABHA	# MULTI HADRON	BEAM ENERGY (GeV)	
			633.39							
527	1.20	1.26	634.65	IBM	0.3	8.0	112	2	7.016	Positron current lost during run. Beams dumped.
1314	1.14	3.25	637.90	IBM	0.3	7.3	252	11	7.016	
1317	1.14	3.36	641.26	IBM	0.27	7.5	296	5	7.016	
1253	1.03	3.20	644.56	"	0.26	7.1	255	6	"	
1206	0.95	3.11	647.67	"	0.24	6.7	256	5	7.015	
388	0.92	1.10	648.77	"	0.22	6.6	102	6	7.015	Beam dumped
1403	1.32	3.48	652.25	"	0.35	11.2	230	5	7.016	JLC chamber problems wires 128–256 dead
1259	1.18	3.05	655.30	"	0.35	8.4	261	7	"	" " " " " "
193	1.12	0.48	658.78	"	0.35	7.2	34	1	"	" " " " " "
15	1.0	0.04	658.82	—	0.3	3.9	6	0		JLC chamber now cured. } NSO cosmic rejection accidentally switched off
1180	1.03	3.09	661.91	"	0.3	4.7	270	11		
406	1.21	1.15	663.06	—	0.22	3.1	88	2		
649	4.55	1.70 (LIBS!)		—	0.35	4.4	40	1	7.017	Beams Lost
1320	1.34	3.31	666.37	—	0.37	7.5	277	6		
805	1.32	2.03	668.40	—	0.30	5.7	163	8		IBM – Error at the end of the run
330		0.95?		—	0.30	18	3	0		
1076	1.25	2.86	670.96	—	.4	6.2	212	3	7.016	
1502	1.42	3.51	674.47	"	.32	9.0	220	7	"	
2122	3.4	5.84	680.31	" ~~TAPE F1103~~	.30	7.0	157	1	"	
1291	1.16	2.89	683.20	F1103	.3	11.4	193	8	"	
1185	1.01	3.15	686.35	IBM	.2	7.1	273	5	"	
1001	.90	2.66	689.01	IBM	.2	5.5	219	10	4	Beams dumped
1232	1.25	2.89	691.85	IBM	.4	9.1	288	8	"	
1319	1.17	3.25	695.10	"		7.6	278	3	"	
609	1.14	1.54	696.64	"	0.2	7.1	141	5	"	
749	1.09	1.91	698.55	"	.2	6.2	170	2	"	
1211	1.06	3.17	701.72	"	.2	6.7	266	6	"	
210	1.05	0.55	702.22	"	.2	6.4	54	2	"	Beams dumped
1422	1.29	3.27	705.43	IBM	.40	8.8	243	6	7.016	
1403	1.22	3.14	708.57	"	0.37	8.8	277	8	"	
1322	1.14	3.10	711.67	"	0.34	7.6	294	5	"	
520	1.26	1.08	712.75	"	0.32	7.9	69	4	"	Beams dumped.
1513	1.11	2.58	715.33	"	0.6	10.5	216	5	7.016	

~13:30 IBM-jam + IBM-error stopped
13:35 beams lost + ID-trip
14:40 New fill – lost immediately.
14:57 New fill.
16:00 Kawabata + Heuer on shift
16:50 ID-trip (Anode current) + BP current high: PKR tried to optimize Lumi. Now they have their fingers away, background ok
16:53 Because of IBM error, stop run 8310. IBM is now down. write the data on tape.
17:35 dead time increases because LG threshold 2 looks like ⎍ in the histogr. Increase threshold
At the same time horrible background fluctuations, but switch off of ID by beam pipe alarm works.
17:40 Beam is normal again, threshold 2 (LG) too.
21:50 Run 8317 stopped because of IBM-errors.
22:20 Run 8318 " " " " "

31/7/81
0:00 Krehbiel & Kanzaki on shift.
0.46 IBM ONLINE - JOB ERROR CHECK JDAS ERROR 44 Sub 205 Task 7
2:30 Positron current is low during run. → [illegible]. Beams dumped.
2.50 I (Kre) tried to find the aforementioned 5 Hz Noise signals. I could not reproduce them. Some minutes after beam dump (and HV's off) I found something like a 1.2 Hz-Signal (70 per minute counter) matching Hellenbrand's description. But it went slower and slower until it came at irregular intervals of several seconds. (Beam-induced µ chamber sparking?)
3.10 The regularity returned. Injection is humming, so I turn the magnet down to see if pulses are connected with it. They are not
3.15 "Short break" at the TV [Move orally to the experts.]
3.42 "Injection" now.
3.57 "Short break" again. Call to Grell (PKR). Response "Restart scan, Leave magnet on!"
3.52 "Injection"
5.20 "Switch on the HV"
5.40 "Luminosity Run" BP Current 0.6 V i.e. higher than before at the beginning of a filling. But PKR crew is unable (or unwilling) to work on, and we can live with the deadtime, so we go on. DT around 15%
6.00 BP settled to 0.4V; PETRA current Lifetimes > 12h, Inst. Deadtime < 9%
6.35 suddenly BP → 0.8; Inst Dead-Time 15%; " " < 10h. We complain. Grell switches to "Background Opt." Tries to tune PETRA. They had increased the frequency with slowly showing up bad consequences. ~~We pause the~~
6.47 "Luminosity Run" again, but BP still 0.58; Inst DT 13.4%; Lifetimes 7.5 hrs. We go on ~~data~~ taking data

conditions.
6.52 "Backgrd. Optim." again. 6.59 "Luminosity Run" It's not as good as before, but we can already under worse
7.00 JDAS Error 44 Sub 703, Task 1
7.45 LG thresholds are adjusted to "50 mV" set up.
8:00 Eichler, Bell on shift
8.40 IBM goes down. Run 8329 ended to allow Eichler to do a Tektronix.
8.43 ID trips. Reset
8.44 Run 8330 started O/P to TAPE.
8.58 IBM back up. Run 8330 stopped.
9.13 ID-trip
9.30 Beams dumped
10.18 New fill
12.33 Run stopped because of IBM busy, IBM on-line error check 2, bad event structure
13:38 Mark J complain about low luminosity. Phone other experiments. They agree to a new fill in ½ hour, although Mark J would prefer a new fill straight away. Our luminosity is ⅔ of what it was at the beginning of the fill.
14.10 Beam dumped
14.40 Fill ready, but high background BP ~1-2 Volts fluctuating. Call PKR. They try to improve Tasso + ~~Mark~~ also high background, Celle claims good condition
14.47 e^+ beam lost.
15.28 New fill.
16.00 Glendinning, Olsson
16:58 YSPY detected the absence of one V34. The run was stopped and a fuse was replaced. Run 8343.
18.15 New fill after TASSO request. We have now worse conditions; D.T. up to 35%. We ask PKR to optimize. It doesn't help. [~1800 Cleaners were here]
20.05 Several dropouts of ID. They have turned the beam, now they (PKR) are told to forewarn us after ID up again. Pause/continue doesn't work, so waits pip pip ... stop and start new run OK.
Branch operating LED on 7-5 crate controller is not blinking. But crate is OK (or?) ← ?
PKR has BP-display, but still fixed scale. They don't see levels below 1 V. We have 0.9 and
21.01 ~50% dead time. They will optimize
23.30 Frequent Time out in 704 IDI8 pulled out and in again: Ok!
1.8.1981
0.00 Naroska, Nozaki II
Request new filling for 0.30. Open hall door to lower temp. in the hall.
0:30 Beams dumped.

RUN	DATE	START	STOP	I^+	I^-	DEAD TIME (%)	TIME (SECS)	RECORDS OUT	ALL TRIGGERS $\times 10^6$	T0 REJECT $\times 10^6$	T0 ACCEPT $\times 10^6$	T1 ACCEPT + POSTPONE $\times 10^6$	T2 ACCEPT	T3 ACCEPT	T2 3TOF 3 TR.	T2 COLLIN	T2 2 2TOF LG>1 2 2TR	~~T2~~ LG>4 ACCEPTED
8326	31.07	6.20	7.02	5.7	5.8	11.9	2197	7846	572.0	68.0	504.0	19.9	4662	280	–	2487	599	
8327	31.07	7.02	7.38	5.3	5.3	12.4	2121	7885	551.7	68.4	483.3	20.5	4567	305	–	2406	622	
8328	"	7.38	815	4.6	4.6	11.9	2153	7892	560	665	493	19.4	4524	272	–	2312	815	~~2~~ 4004
8329	"	820	837	4.3	4.3	11.4	981	3391	255	28.9	226	8.4	1955	115	–	1036	384	
8330	"	844	857	4.2	4.2	11.2	794	2791	206	23.2	183	6.3	1512	84	–	807	256	
8331	"	8.58	925	3.9	3.9	11.9	1464	5009	381	45.2	336	11.3	2753	169	–	1483	491	1564
8332	"	926	930	3.9	3.9	15.9	205	651	53	8.5	44.9	1.4	357	16	–	183	72	203
8333	"	1018	1051	5.4	5.7	12.1	1952	7899	508	86.8	421	17.2	4048	240	–	1941	852	2305
8334	"	1051	1133	5.1	5.3	10.3	2505	7846	651	67.1	584	16.3	4015	190	–	2397	665	2416
8335	"	1134	1208	4.9	5.0	13.5	2026	7893	527	71.2	456	16.3	3959	235	–	2113	718	2482
8336	"	1212	1232	4.6	4.8	21.9	1146	5427	298	65.3	232	12.5	~~2888~~ 4223	242	–	1370	615	1429
8337	"	1233	1301	4.3	4.5	18.3	1662	7920	427	78.1	348	18.4	~~875~~	326	–	1896	875	2189
8338	"	1301	1332	4.1	4.2	17.9	1814	7891	472	84.6	387	18.6	4230	315	–	2085	820	2265
8339	"	1332	1404	3.8	3.9	14.5	1861	7890	484	70.2	414	18.3	4224	256	–	2170	757	2389
8340	"	1408	1410	3.7	3.9	12.9	87	361	23	3	20	0.7	183	11	–	102	34	114
8341	"	1528	1556	5.8	5.8	16.8	1703	7915	443	74.4	369	12.4	3541	206	–	~~1687~~ 1682	1142	2868
8342	"	15:57	16:37	5.0	5.1	11.6	2376	7865	618	71.8	546	17.3	4122	261	–	2337	728	36778
8343	"	16:37	16:59	5.2	5.2	22.3	759	3745	198	44.1	153	8.7	2062	154	–		846	16217
8344	"	17:06	17:18	4.9	5.0	23.8	688	3532	179	42.6	136	7.9	2114	139	–	773	570	16132
8345	"	17:25	17:26	4.85	4.92	27.8	23	134	5.9	1.6	4.3	0.2	74	6	–	28	15	500
8346	"	17.57	17.57					21										
8347	"	17.58	18.26	5.7	5.7	23.2	1352	7938	352	81.8	270	16.6	4018	320	–	1627	878	35145
8348	"	18.27	18.51	5.4	5.4	19.2	1431	7929	372	71.5	300.8	17.0	4118	325	–	1786	842	36995
8349	"	18.51	19.21	5.1	5.1	15.4	1697	7906	442	67.9	374	17.6	4112	317	–	1986	753	34276
8350	"	19.22	19.51	4.8	4.8	12.9	1719	6455	447	57.7	389	14.0	3162	2000	–	1781	477	26599
8351	"	19.55	20.02	4.7	4.7	14.6	194	851	50	7.3	43	1.6	418	25	–	232	86	3601
8352	"	20:08	20:25	4.6	4.6	9.5	1006	3494	261	24	236	5.4	1447	73	–	945	212	14881
8353	"	20:57	21:28	5,7	5,8	25,7	1370	7946	357	91,9	265	17,2	4462	359	–	1511	706	1998
8354	"	21:29	21:55	5,4	5,5	25,8	1548	7941	403	104	299	17,6	4348	338	–	1682	692	2196
8355	"	21:55	22:27	5,0	5,1	28,4	1857	7923	483	137	346	18,4	4293	302	–	1791	599	9970
8356	"	22:27	23:01	4,7	4,8	14,4	2035	7880	529	75.9	453	18,1	4146	274	–	2123	446	2353
8357	"	23:01	23:21	4.5	4.6	11.2	1166	4063	303	34.0	269	8.9	2050	133	–	1236	258	1282
8360	"	23:32	23:41	4.4	4.5	7.6	518	1348	135	10.2	124	2.5	650	29	–	423	96	457

~~LUMI~~ ACCEPTED	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ RUN	$\int L dt$	IBM / TAPE	BEAM PIPE (V)	REJECT EVENT FRACTION (%)	# BHABHA	# MULTI HAD.	BEAM ENERGY (GeV)	
1539	1.05	2.31	717.64	IBM	0.37	11.4	194	9	7.016	
1441	0.91	1.94	719.58	"	0.53	10.4	156	5	"	
1241	0.8	1.71	721.29	"	0.48	10.6	126	3	"	
532	0.72	0.71	722.00	"	0.45	9.6	55	3	"	IBM goes down.
370	0.63	0.5	722.5	F11106 TAPE	0.45	8.5	45	0	"	
618	1.09	1.59	724.09	IBM	0.44	9.7	68	2	"	IBM back up.
68	0.49	0.10	724.19	"	"	6.9	8	0	"	beam dumped for new filling
1477	1.18	2.3	727.49	"	0.7	9.7	186	5	"	
1451	1.17	2.93	730.42	"	0.35	8.6	259	7	"	
1418	1.13	2.29	732,71	"	0.34	8.9	181	6	"	
1014	0.94	1.08	733.79	"	0.65	10.4	80	5	7.015	
1412	0.9	1.48	735.27	"	0.06	11.1	133	2	"	
1316	0.78	1.42	736.69	"	0.59	10.5	115	6	"	
1236	0.73	1.36	738.05	"	0.55	10.6	104	0	"	
66	0.71	0.06	738.11	"	?	6.5	3	0	"	Beam dumped.
1076	1.20	2.04	740.15	"	0.45	9.0	181	4	7.016	
1473	1.16	2.75	742.90	"	0.36	9.3	199	6	7.016	
600	0.94	0.71	743.61	"	0.72	12.2	44	2	7.016	
497	0.89	0.61	744.22	"	0.74	14.0	36	1	7.015	
15	0.58	0.01	744.23	"	0.74	4.3	1	0	"	Beam dumped
		0	744.23		0.50		0	0	7.016	16M Link problem
1416	1.10	1.49	745.72	"	.50	12.0	144	5	"	
1474	1.15	1.65	747.37	"	0.4	11.5	127	4	"	
1449	1.10	1.87	749.24	"	0.65	10.7	143	2	7.015	
1099	1.10	1.89	751.13	"	0.43	8.1	149	8	"	
159	1.32	0.26	751.39	"	0.30	5.5	16	0	"	
479	1.05	1.05	752.44	"	0.30	4.9	87	2	"	Beam lost.
1351	1,08	1,48	753.92	"	0,8	13%	122	1	7.016	
1343	0,96	1,48	755.40	"	0,8	9,0%	136	7	"	
1365	0,88	1,64	757.04	"	0,7	11,5%	123	2	"	
1378	1,05	2,13	759.17	"	0,6	9,5%	166	7	"	
680	1.00	1-17	760.34	"	0,45	68	108	3	7.015	
					0.27					
228	1.04	0.54	760.88	"		5.8	57	4	"	

RUN	DATE	START	STOP	I^+	I^-	DEAD TIME %	Time (sec)	Records out	All Triggers $\times 10^6$	T0 Reject $\times 10^6$	T0 Accept $\times 10^6$	T1 ACCEPT prescale $\times 10^6$	T2 ACCEPT	T3 ACCEPT	T2 3TOF 3 Trk	T2 Collim.	T2 $\geq$2 TOF 4ns	LG >4GeV Accepted
8361	31/07 01/08	23:42	0:25	4.2	4.2	9.4	2573	7843	670	632	607	15.1	3886	216	—	2397	590	2655
8362	01/08	0:25	0:30	4.1	4.1	13.6	163	699	42.5	5.8	36.8	1.6	342	22	-	172	70	258
8363	"	1:00	1:26	5.5	5.8	22.9	1467	7947	382	87.4	294	19.8	4557	378	-	1831	714	2072
8364	"	1:27	1.46	5.2	5.5	27.0	1146	6109	298	80.5	218	15.8	3777	342	-	1413	500	1430
8365	"	1.49	2.84	4.9	5.2	16.2	2023	7885	527	85.5	442	19.0	4488	341	-	2261	476	2102
8366	"	2.24	3.16	4.6	4.8	8.3	3055	7779	795	66.1	728	15.8	4128	174	-	2714	377	2418
8367	"	3.16	4.09	4.2	4.5	7.8	3167	7815	824	63.9	760	15.0	4001	186	-	2736	365	2488
8368	"	4:09	5:01	3.9	4.2	12.2	3083	6791	802	98.0	704	13.0	3652	190	-	2500	311	2116
8369	"	5:29	5:53	5.7	5.8	25.2	1293	7935	336	84.9	251	15.4	4072	335	-	1450	452	2804
8370	"	5:53	6:20	5.6	5.6	18.2	1591	7914	413	75.1	338	15.3	3829	321	-	1682	321	3056
8371	"	6:20	6:44	5.4	5.4	14.7	1421	7910	370	54.2	315	9.5	2202	116	-	1354	187	4948
8372	"	6.45	7:07	5.2	5.2	16.4	1329	7917	346	56.9	289	7.7	1788	110	-	640	65	2602
8373	"	7.07	7.31	5.1	5.1	15.0	1407	7917	366	54.8	311	8.1	1986	118	-	1290	152	5198
8374	"	7.31	7.33	"	"	9.7	103	391	27	2.6	24	0.6	153	5	—	101	8	173
8375	"	7.34	8.11	4.8	4.8	10.5	2179	7835	567	59.8	507	13.8	3290	146	-	2147	225	18664
8376	"	8.20	8.54	4.6	4.6	10.1	2046	7858	532	54	478	11.7	2913	190	-	1874	256	3891
8377	"	8.54	9.37	4.4	4.3	8.8	2536	7844	660	58	602	13.5	3572	198	-	2328	310	21029
8378	"	9.38	10.00	4.2	4.2	10.4	1317	5612	343	35.6	307	6.6	1628	63	-	1122	132	3456
8379	"	10.25	10.43	5.9	6.0	16.1	1435	7921	373	60.0	313	11.6	2699	155	-	1477	330	25345
8380	"	10.50	11.00	5.8	5.9	12.4	593	2416	154	19.0	135	4.8	1121	65	-	641	123	7407
8381	"	11.11	11.44	5.5	5.5	11.9	1991	7873	518	61.7	457	15.0	3507	193	-	2084	433	26073
8382	"	11.45	12.21	5.3	5.3	10.9	2174	7864	567	62	505	15.9	3728	195	—	2242	620	28971
8383	"	12.24	13.08	5.0	5.0	21.8	2447	7857	650	141	508	15.3	3653	202	-	2160	424	25585
8384	"	1304	13.45	4.7	4.7	11.2	2182	7848	567	63.7	503	15.5	3533	213	—	2139	383	3104
8385	"	13.46	14.27	4.5	4.5	9.6	2444	7831	636	60.8	575	15.6	3870	185	-	2432	432	25646
8386	"	1427	15.08	4.2	4.3	10.3	2406	7855	626	64.7	561	16	3932	195	-	2336	465	2716
8387	"	1508	1553	4.0	4.0	9.6	2653	7813	696	61.8	628	14.7	3763	168	-	2439	408	2993
8388	"	15.53	16.34	1.9	3.9	8.5	2244	6471	583.9	49.8	534	12.1	3198	151	-	2038	402	2387
8389	"	16.56	17.30	5.7	5.7	12.3	2002	7884	521.1	64.1	457	15.0	3483	197	-	2015	496	2988
8390	"	17.31	17.36	5.7	5.6	11.5	262	1056	68.1	7.8	60.3	2.0	473	25	-	305	73	352
8391	"	17.42	18.18	5.4	5.3	11.1	2155	7863	560.5	62.3	498.2	16.2	3694	217	-	2270	485	2596
8392	"	18.19	18.47	5.2	5.1	10.1	1704	5509	443.2	44.6	398.6	11.1	2561	149	-	1457	236	1885
8393	"	8.48	19.25	4.9	4.9	11.0	2127	7356	535.5	60.8	492.7	14.8 492.7	3438	215	-	2119	403	2462
8394	"	19.30	20.16	4.6	4.5	12.3	2734	7840	711.6	87.3	624.3	16.2	3767	207	-	2310	262	2564
8395	"	20:17	21.07	4.4	4.2	7.9	2931	7509	763.1	60.2	702.8	15.5	3735	169	-	2441	194	2431

Lumi Accepted	$\langle L \rangle \cdot 10^{30}$	$\int L dt$ Run	$\int L dt$ insgesamt Jan 88	IBM Type	Beam pipe (V)	reject event fraction %	# Bhabha	# Hadrons	Beam Energy (GeV)	Your comments, if any
1241	0.97	2.50	763.38	EBM	~0.3	7.4	230	10	7.014	
97	2.21	0.36	763.74	"		7.9	13	0	"	Beams dumped
1473	1.02	1.50	765.24	"	0.8	13.5	124	2	7.016	
1226	0.94	1.07	766.31	"	0.9	16.2	91	2	"	
1390	0.97	1.96	768.27	"	0.8	11.5	143	3	"	
1329	1.00	3.04	771.31	"	0.3	7.8	253	8	7.016	
1325	1.00	3.18	774.49	"	0.26	6.7	274	3	7.015	
1036	0.82	2.54	777.03	"	.25	7.7	195	3	"	Beams dumped
1369	1.91	2.47	779.50	"	0.9	15.2	102	5	7.016	
1390	1.05	1.67	781.17	"	0.7	13.7	154	4	"	
746	1.04	1.47	782.64	"	0.4	4.6	117	4	"	
289	0.93	1.24	783.88	"	0.35	3.2	85	7	"	
626	0.90	1.27	785.15	"	0.35	3.5	113	2	"	
69	0.94	0.1	785.65	"	?	0.5	10	1	"	Runs hung up "No Level bank"
1088	1.00	2.18	787.83	"	0.34	6.5	204	4	"	
919	1.01	2.07	789.90	"	0.32	5.7	195	0	7.015	
1053	0.97	2.42	792.37	"	0.3	6.0	212	5	7.014	
493	0.9	1.19	793.56	"	?	6.0	101	5	"	Beam dumped.
904	1.17	1.68	795.24	"	0.5	6.0	156	2	7.016	
373	1.21	0.72	795.96	"	0.45	6.5	52	1	"	
1190	1.14	2.26	798.22	"	0.40	7.2	196	10	"	
1261	1.11	2.42	800.64	"	0.40	7.7	191	11	"	
1192	0.94	2.36	803.00	"	0.38	7.3	218	6	"	
1199	1.03	2.26	805.26	"	0.40	7.3	199	10	"	
1229	1.03	2.51	807.77	"	0.34	7.6	237	4	7.014	
1200	0.97	2.34	810.11	"	0.35	7.4	206	7	7.014	
1058	0.89	2.35	812.46	"	0.33	7.6	200	2	"	
883	0.84	1.88	814.34	IBM	0.32	7.1	142	6	7.008	Beams dumped.
1275	1.18	2.36	816.70	"	.50	7.2	179	7	7.016	
185	1.18	0.31	817.01	"	0.42	2.1	32	1	7.016	IBM error
1436	1.13	2.44	819.45	"	0.34	7.9	211	4	7.016	
954	1.10	1.87	821.32	"	0.35	7.1	153	4	"	
1295	1.19	2.52	823.84	"	0.34	7.5	195	6	7.015	N50 needed reloading.
1385	0,97	2,64	826,48	"	0,35	6,9	206	12	"	
1283	0,88	2,87	827,35	"	0,30	6.4	233	12	"	Beams dumped, voluntarily

1.8.1981

0.59 New filling ready, BP .8, DT ~ 30%, PKR are trying to improve
1.50 Frequent timeout error in 703 was fixed by pulling out/in DL8's.
2.07 After 1 hour of beam just DT ~ 13%, BP 0.53, Lifetime ~ 8h
Tasso's conditions seem to be better, but also worse than several days ago.
4.40 Asked for new fill at 5:00.
4.50 Timeout 704 every event, Shake DL8, pull out stand, back in, now it works again. → Maybe during day time something should be done about branch 7.

5:02 Beams dumped.
7.30 1 LG endcap block very noisy; triggerrate up by factor 2.

8:00 W. Bartl & A. Bell on shift
8:15 Stop for a while to give R. Eichler the opportunity to run some tests on the NORD
Memory error log device of N10 was full. This possibly explains some problems. Clear memory errors and reload copy-tasks and 2READ, 2DAS. RAE
9:45 check all histograms for run 8377. They are ok
10:00 Beam dumped for new fill
10:25 New fill. Run 8378 started
11:00 NORD 50 hang up restart NORD ok
12:45 very high dead time due to 3ADEDUMP running on the IBM
Jimmy: Dumps ~~finished last~~ in activity for 26 min and Disk used still over 71% with increasing tendency. Sooner or later we may have a problem.
The IBM-busy-problem however has disappeared
13:05 The dumps finished and released all disk space (8% used).
What the hell is a dump job doing in 26 min?
13:20 All histograms ok
16^{00} Rowe and Olsson on shift.
16^{35} Beams dumped – ID trip. OK.
17^{03} Hole in JETC wire map. Try fiddling with connections (which are a bit dodgy) → cures the effect.
17^{36} IBM error (busy, not data taking) – ~~run error~~ stopped and disc set up – but IBM working OK by the time we were ready.
18^{50} YSP4 ~~error~~ gave error: fwd-muon counter hit map was found to be different in bins 30-31. We reran ~~log~~ histogram later and the reading was still low although received slightly – above program threshold. Low contents were also noted in bins 1, 12, 13, 14, 15, 16, 17, 18, 19. These areas probably correspond to places further from the beam. Perhaps

The program should be modified.

19^{14} Anode current trip.

19^{30} N50 giving 'busy' etc. – Reloaded. OK.

21^{33} ~~JDAS~~ errors (44 subscr. 704). Olsson alters DL8 → JDAS error 46. The 1's are 0's and vice versa. ~~[illegible]~~

22^{40} Try to start run. It gets automatically terminated after 2 events. Call Eichler. Run is successfully started again at 22^{49}. (microprocessor program had to be reloaded)

23^{15} Look at JETC histogram shows a whole crate missing. Wagner phones (luckily) and says that ~~this~~ happened 2 days ago – he suggests it is ~~the~~ cable to the computer (bad contact). We stop the run to try this. Crate controller 503 exchanged.
23^{35} We start taking data again – still hole in wire map – Wagner comes.

02/08/81
0^{00} Meier and Konamiya on shift.
01^{00} Search for CAMAC error still goes on, experts ratlos
2^{04} After 2^{30} hours of ghost chasing (or wild goose chasing) we finally, thanks to an enlightening remark by readout expert Dr RAE, trace the problem to „no Q response" in first DL8 of crate 3, branch 5. (J.E.O + AW)
New fill requested
2^{51} New filling is ready.
DL8 wire #81-#88 Missing. Knocked the front panel by screwdriver.
→ seems to be o.k.
800 Eichler + Bell (yes again) on shift.
Beams dumped.
828 New fill.
833 Again error 44 subscr 703 3x in a row followed by fetch high current part 45
837 fetch high current. ID off. BP-current fluctuating
9:45 adjust (lower) LG-thresholds
11:00 Muon chamber 44 singles rate 100x higher than average. Call A. Ball. We will come in later.

RUN	DATE	START	STOP	I^+	I^-	DEAD TIME %	TIME (SECS)	RECORDS OUT	ALL TRIGGERS /10^6	TØ REJECT /10^6	TØ ACCEPT /10^6	T1 ACCEPT + POSTPONE /10^6	T2 ACCEPT	T3 ACCEPT	T2 3 TOF 3 TR.	T2 COLUN	T2 ≥2TOF LG>1 ≥2TR	T1 LG>4 ACCEPTED	T1 LUMI ACCEPTED	<L> /10^{30}	∫L dt RUN	∫L dt	IBM / TAPE	BEAM PIPE /V	REJECT EVENT FRACTION %	# BHABHA	# MULTI HADRON	BEAM ENERGY /GeV	Comments (if any)
8396	1.8.81	21.30	21.34	6.0	6.0	12.6	208	813	54.1	6.8	47.3	1.6	380	25	—	222	34	219	145	1.14	0.24	827.59	IBM	0,5	-1.1	20	0	7.017	JDAS error 44 subcr. 704.
8397	dont exist																												
8398																													
8399	"	21.47	21.48	5.9	5.9	71.3	70	87	18.3	13.1	5.3	0.2	29	3	—	23	1	25	15	0.38	0.03	827.62	"	0.4	-27.9	2	1	7.017	
8400	"	21.51	21.51	5.6	5.6	0	0	24	0	0	0	0	0	0	—	4	1	3	3	0	0	827.62	"	0.37	0	0	0	7.016	JDAS error 46.
8401																													
8402	dont exist																												run automatically ended after event no. 2
8403																													
8404																													
8405	— lost —																												
8406	"	23.12	23.20	5.2	5.1	8.5	455	1297	118.2	10.1	108.2	3.1	637	31	—	410	45	385	280	1.17	0.53	828.15	"	0.36	7.0	44	1	7.016	Had to stop :: JETC crate went missing
8407	"	23.23	23.27	5.2	5.1	10.0	263	775	68.2	6.8	61.4	1.8	373	27	—	242	25	222	156	1.05	0.28	828.43	"	0.41	5.8	31	3	"	Olsson puts new ϕ controller in crate of JETC circuitry
8408	"	23.35	23.46	5.1	4.9	8.4	621	1805	161.6	13.5	148.1	4.2	880	42	—	584	50	591	349	1.01	0.63	829.06	"	0.40	6.5	53	2	"	Wagner comes to look at cable of crate.
8409	2.8.81	23.50	0.01	5.0	4.8	9.0	643	1714	167.2	15.1	152.1	4.0	897	45	—	603	52	2993	341	1.02	0.66	829.72	"	0.4	8.0	49	0	"	Run with missing crate of JETC
8410	"	2.52	3.18	5.9	5.9	11.8	1570	5871	408.4	48.3	360.0	11.4	2497	152	—	1472	200	13939	1088	1.30	2.04	831.76		0.45	7.1	183	3	"	~~not written~~
8411	"	3.35	4.23	5.4	5.4	9.2	2898	7787	754	69.1	685	17.6	4033	227	—	2687	261	13218	1628	1.21	3.50	835.20	"	0.36	8.2	303	8	"	
8412	"	4.24	5.14	5.1	5.1	8.2	3009	7822	783	63.9	719	16.6	3957	209	—	2735	257	13455	1603	1.19	3.57	838.77	"	0.3	7.0	305	5	"	
8413	"	5.15	6.10	4.7	4.7	8.8	3053	7770	794	69.6	724	16.1	4017	229	—	2745	282	14105	1494	1.10	3.35	842.12	"	0.29	7.7	291	8	"	
8414	"	6.10	7.02	4.4	4.4	8.1	3134	7785	~~750~~ 815	65.7	750	16.0	4144	181	—	2833	308	15100	1388	1.02	3.21	845.33	"	0.3	7.8	270	10	"	
8415	"	7.03	7.56	4.2	4.1	7.4	356	7784	821	60.8	760	15.3	4110	182	—	2837	368	2427	1267	0.95	3.01	848.34	"	0.27	7.0	271	7	"	Beams dumped.
8416	"	8.27	9.17	5.4	5.8	11.8	2591	7867	652	77.2	575	17.3	4236	245	—	2404	609	2349	1396	1.15	2.89	851.23	"	?	9.3	243	5	"	
8417	"	9.26	10.08	5.0	5.5	10.7	2452	7842	638	68.3	569	17.2	4081	204		2433	488	2164	1620	1.09	2.68	853.91	"	0.38	8.2	227	7	"	
8418	"	10.09	10.51	4.8	5.2	10.1	2558	7850	665	67.2	598	17.1	4117	185	—	2465	526	2197	1540	1.03	2.64	856.55	"	0.34	7.9	206	1	"	
8419	"	10.52	11.36	4.5	4.9	9.9	2629	7802	684	67.6	616	16.3	4081	217	—	2480	455	2237	1483	1.01	2.66	859.21	"	?	8.1	211	8	"	
8420	"	11.36	12.23	4.3	4.6	8.9	2790	7805	725	64.3	661	16.3	4095	201	—	2558	487	2341	1425	0.93	2.59	859.80	"	0.3	7.8	216	6	"	
8421	Mark 10 crash. No run summary. Approximately 70 events read out.																												
8422	"	12.27	12.43	4.2	4.5	8.2	952	2509	247	20.2	227	5	1345	57	—	877	131	741	442	? 741	0.85	860.65	"	0.35	7.7	84	1	7.015	Beams dumped.
8423	"	13.16	13.53	5.8	5.9	13.4	2068	7857	537	72.2	465	17.5	3849	223	—	2153	392	2161	1876	1.29	2.68	863.33	"	0.52	8.9	216	6	7.016	
8424	"	13.53	14.31	5.5	5.6	21.6	2253	7852	586	67.8	518	18.6	4014	222	—	2294	407	1975	1969	1.24	2.79	866.12	"	0.45	9.2	199	4	"	
8425	"	14.31	15.07	5.3	5.3	11.7	2129	7877	553	64.9	489	17.7	3885	210	—	2108	482	2105	1875	1.18	2.51	868.63	"	?	8.7	196	6	"	
8426	"	15.07	15.43	5.1	5.1	11.2	2158	7372	561	63	498	16.5	3646	187	—	2062	448	~~2098~~ 2098	1660	1.04	2.24	870.87	"	0.39	8.4	179	9	"	Run ripped as IBM goes down
8427	"	15.50	15.52	5.0	5.0	9.3	122	384	31.9	3	28.9	0.85	187	"	—	115	25	101	82	1.14	0.14	871.03	TAPE F11098	0.38	6.1	8	1	"	O/P TO TAPE
8428	"	15.53	16.29	4.8	4.8	11.6	2127	7867	553	64.0	489	16.9	3954	192	—	2144	516	2090	1741	1.04	2.20	873.23	IBM	0.37	9.6	189	4	7.015	IBM back up.
8429	"	16.28	16.59	4.6	4.6	~~13.4~~ 11.7	1651	6817	430	51.7	372	15.1	3390	202	—	1606	491	~~1740~~ 1662	1602	1.02	1.68	874.91	"	0.44	11.5	131	5	"	stopped :
8430	"	17.00	17.17	4.5	4.5	12.1	984	3863	257	31.0	226	8.5	1863	104	—	977	258	1058	881	1.00	0.99	875.90	"	0.45	8.9	93	3	"	

Filling 17.19 →

2.8.81

12 30 Nord 10 crash. Restarted.

12 46 Beams dumped.

In the last days there was occasionally message: bad event structure, IBM online error checks followed by JDAS error 44 suberror 205. This was due to an error in on-line program. The correct error message is JDAS error 56 i.e. TOF-bank wrong length. Event is rejected and is not seen by NSO or IBM. The only consequence is: wrong error statistics.

13 18 New fill. Run 8433 started.

14 35 adjust (lower) LG-threshold

14 40 Hmm crate 3 missing → reset.

14 44 Message Hm crate 3 missing is now quite frequent, but disappears by itself.

15 02 " " " " " " " " " " (every 20 seconds)

15 07 Start new run. Hm crate missing message stays off.

15 43 IBM down. Call 3818 and complain. IBM-operator did'nt know. I will investigate problem.

16 00 Yamada + Heine

16 10 ID trip (anode current)

17 02 JDAS ERROR 00044. 402 (Time out.) Then — No Triggers for 20 SECONDS —
Run 8429 stopped.

17 17 New filling requested

17 25 " ready

IBM disc is nearly 90% full, 3 dump jobs are waiting for execution, a lot are on output queue. The Operator at the IBM could not start any of our dumpjobs. We get the password and release all JADDUMP which are on output queue (Why are they in hold mode?)

18 00 Another Dump job is submitted but none of the four is active.
Disk ~~97.8~~ 98 % full, IBM Busy IBM ERROR 54 TEL IBM 2550/3818
no trigger. Run stopped. Then (* IBM operator stopped our online job for a short period!)
Then ↓
Operator took out our online programm

We have to write on tape since nobody knows how to activate JADDUMP.
Koch weller and Freese are not at home (the weather is too good)

19 30 JADDUMP decided to become active!

18.38 JDAS ERROR 000044, suberror 703 TASK 1. But the Run continued.
Check Standard histograms: Tagging looks a bit funny: rather broad $E_{\pm 2}$-distributions
In the next Run the tagging histograms look ok again

~~19~~ 21:20 Prof. G. Weber visits The dump job was finished in the meantime.

19:35 Run 8438 trips IBM link again. The disk space is empty again (~0%) G.S.D!
The dump job took somehow almost ~~one~~ hour!

21:45 Now we don't have any JADDUMP waiting for execution. Asking the operator to put one in to the ~~wait~~ queue ~~resulted in~~ gave the following result: The job went immediately to the output queue, obviously it checks the space on disc (was only ~40% full)

22 00 New filling

22 25 JDAS ERROR 000046: Run stopped manually.

22:30 FROM the Run 8439 LG threshold for 60 mV.
Trigger rate after modification is OK.

22 45 ID trip

~~22~~ 23:20 One Dump job is waiting for execution. Disk is ~~70~~ 68% full.

23:30 very often μ-crate missing (12, 17) - A-Ball is here
If μ-crate 12 goes permanently missing, and after you reset it, ~~goes~~ goes permanently missing again after a short time :-
1) Look at VDU above crate 12
2) If the last thing written there is '>', type G_2
If this doesn't work, call me (AB) or Fred Lochinger (2746).

G_2 only the 1st. one

23:40 Rate increases → increase LG threshold 1 for 65 mV

23:48 Two DUMP jobs are in IBM. One of them is active. We can wait with a ~~h~~ hope! The disk is 82% full by now.

23 50 JDAS ERROR 000044, 702 → No trigger.
↑
It could be accidentally coincided with the I.C. H.V. trip due to high B.P. current.

~~3~~ Aug.-81 Mon.

0:00 U. Bartel & Odaka on shift

All STD. histograms for run # 8442 ok
The displays routines of YMON or YMON is buggyed. Histogram #1 cannot be plotted. Also after several attempts.

3:00 YMON or display routine now completely screwed. No histogram can be displayed. During the next fill we shall reload WORD

3:02 New fill requested

Run	Date	start	stop	I^+	I^-	Read Time	時間 Time	Records out	All Triggers (M)	TØ REJECT /10⁶	TØ ACCEPT /10⁶	T1 Accept +postpone /10⁶	T2 Accept	T3 Accept	T2 3TOF 3TR	T2 COLLIN	T2 ≥2TOF LG>1 ≥2TR	T1 LG>4 (HG)	T1 Lumi	<L> /10³⁰ cm⁻²s⁻¹	∫Ldt Run	∫Ldt	IBM / TAPE	Beam Pipe (V)	Rej. ev. frac(%)	# Bhabha	# mult. had.	Beam Energy (GeV)	
8431	2.8.81	17:37	17:59	5.9	5.9	11.8	1303	4784	339	40.1	299	10.2	2392	123	—	1362	345	1332	970	1.19	1.56	877.46	IBM	0.4	7.6	154	3	7.017	"stopped" due to IBM disk full (97.8%)
8432	"	18:05	18:45	5.9	5.9	10.5	2349	7858	611	64.0	547	17.9	3510	209	—	2278	508	2261	1619	1.18	2.77	880.23	Fill 094 Tape	"	8.6	225	3	7.016	
8433	"	18:48	19:28	5.3	5.3	10.1	2398	7850	624	62.9	561	17.1	4011	245	—	2418	566	2258	1548	1.23	2.95	883.18	Fill 108 tape	"	8.6	225	8	7.016	
8434	"	19:30	20:15	5.0	4.9	9.5	2607	7826	678	64.6	614	16.7	3884	196	—	2421	483	2382	1586	1.17	3.05	886.23	IBM	0.38	8.0	223	9	4	
8435	"	20:15	20:59	4.7	4.7	9.4	2618	7839	681	64.0	617	16.2	3968	170	—	2454	518	2352	1522	1.10	2.88	889.11	"	0.35	7.9	254	7	4	
8436	"	21:00	21:42	4.5	4.4	9.2	2561	7848	667	61.1	606	15.0	3752	190	—	2304	576	2575	1464	1.08	2.75	891.86	"	0.33	7.4	248	8	7.014	
8437	"	21:42	21:58	4.4	4.3	8.7	877	2541	228	20.0	208	4.9	1262	60	—	798	188	762	480	1.07	0.93	892.79	"	0.31	7.1	62	4	"	IBM disk 48.2% filled — New Filling from 22⁵⁰ to 22²⁰ stopped because of Reproc-error
8438	"	22:20	22:22	6.2	6.2	24.7	65	336	17	4.2	12.8	.5	150	3	—	80	22	74	52	1.07	.07	892.86	"	0.48	—	7	0	7.017	
8439	"	22:23	23:04	6.1	6.1	12.4	2135	7869	555	68.7	487	16.7	3606	191	—	2019	330	2034	1716	1.55?	3.31	896.17	"	.40	7.8	215	11	7.016	
8440	"	23:04	23:32	5.8	5.8	13.3	1652	7892	430	52.0	373	11.4	2558	121	—	1568	198	4112	1244	1.26	2.07	898.24	"	.35	5.4	167	5	7.016	
8441	"	23:32	23:50	5.5	5.5	14.2	1024	4155	266	37.9	228	7.1	1558	104	—	565	81	9272	774	1.17	1.19	899.43	"	0.38	6.0	105	0	7.016	
8442	30/8/81	23:51	0:25	5.2	5.2	12.7	1957	7873	509	64.6	444	12.1	2781	117	—	1770	230	3869	~~1358~~ 1358	1.18	2.32	901.75	"	0.36	6.0	199	3	7.015	
8443	"	0:26	0:50	5.1	5.0	13.7	1462	7911	380	51.9	328	8.88	2123	108	—	1365	180	4730	~~962~~ 962	1.17	1.71	903.46	"	0.35	3.8	126	5	"	
8444	"	0:51	1:19	4.9	4.9	11.9	1691	7891	440	52.3	388	9.86	2284	117	—	1494	218	4486	~~1043~~ 1043	1.13	1.92	905.38	"	0.34	4.6	143	4	"	
8445	-	1:20	1:53	4.7	4.7	11.4	1980	7867	515	58.8	456	11.3	2636	123	-	1738	246	~~4018~~ ~~2315~~	~~1175~~ 1175	1.08	2.13	907.51	-	0.33	5.4	192	6	"	
8446	-	1:54	2:18	4.6	4.5	13.1	1434	7918	373	48.8	324	7.8	1877	177	-	1232	177	~~5156~~ ~~2947~~	~~823~~ 823	1.04	1.48	908.99	-	0.35	3.7	115	3	"	
8447	-	2:18	2:49	4.4	4.3	11.6	1847	7874	481	55.8	425	9.8	2327	128	-	1522	204	~~4503~~ ~~2378~~	~~995~~ 995	1.00	1.85	910.84	-	0.30	4.7	145	5	7.014	
8448	-	2:50	3:01	4.3	4.3	9.4	542	1729	141	13.2	128	2.9	663	40	-	444	68	~~716~~ ~~476~~	~~397~~ 397	1.03	0.56	911.40	-	0.30	4.9	42	1	"	
8449	"	3:23	3:51	5.9	5.9	13.0	1644	7889	428	55.7	372	12.4	2702	168	—	1632	219	~~3887~~ ~~1764~~	1264	1.36	2.23	913.63	"	0.45	6.1	158	5	7.016	
8450	"	3:51	4:20	5.7	5.7	12.9	1669	7882	434	56.0	378	12.9	2743	167	—	1684	167	3824	1355	1.27	2.11	925.74	"	0.42	6.4	168	4	"	
8451	"	4:20	5:03	5.4	5.4	10.0	2546	7842	662	66.2	596	17.2	3716	219	—	2338	233	2382	1736	1.22	3.09	928.83	"	0.41	7.4	245	3	"	
8452	"	5:03	5:37	5.2	5.2	10.9	1987	7884	517	56.1	461	12.6	2748	129	—	1740	203	3801	1320	1.17	2.33	931.16	"	0.35	5.6	208	3	7.015	
8453	"	5:37	6:08	5.0	5.0	10.7	1839	7868	478	51.0	427	11.0	2566	126	—	1706	184	4130	1157	1.15	2.13	933.29	"	0.35	5.1	169	7	"	
8454	"	6:09	6:17	4.9	4.9	58.1	500	4842	130	7.5	54.4	1.3	274	11	-	178	22	4336	130	0.50	0.25	933.54	-	"	(9.2)	21	0	-	μ proc failed
8457	-	6:33	6:47	4.7	4.7	35.5	691	7964	180	63.8	116	2.7	644	41	-	412	55	6676	282	0.85	0.59	934.13	-	0.35	0.3 1.8	37	3	"	no μ proc wrong Lg
8458	-	7:05	7:49	4.4	4.4	38.7	2625	7845	683	59.3	624	15.6	3801	173	-	2948	345	2120	1465	1.02	2.68	936.81	-	40.32	~~4.56~~	222	7		
8459	3/8/81	7.51	7.58	4.4	4.3	9.6	409	1117	106	10.3	96.3	2.2	540	21	—	337	52	339	199	.97	0.40	93721	—	0.8	5.16	38	0	7.015	beams dumped
8460	"	8.24	9.02	5.9	6.1	13.1	2052	7790	534	70.0	464	18.0	4135	255	-	2203	510	2055	1662	2.23	4.57	941.78	"	0.43	9.5	200	10	7.017	
8461	"	9.03	9.44	5.5	5.8	13.1	2248	7945	585	76.4	508	17.1	3983	216	-	2282	444	2071	1729	1.22	2.74	944.52	"	0.42	8.4	222	10	7.016	
8462	"	9.45	9.59	5.4	5.7	11.3	755	2991	197	22.2	174.7	5.7	1336	65	—	~~1~~ 194	180	1011	596	1.21	0.91	94543	"	0.39	5.0	84	1	7.016	beams dumped
8463	"	13.46	13.50	6.0	6.1	77.6	128	1355	33.2	25.8	7.4	0.3	107	5	—	48	19	1161	33	11.15	water	ense (OT)	"	0.53	0.1	5	0	"	
8464	"	13.50	14.10	5.9	6.0	23.8	1146	7940	298	71.1	227	10.2	2247	131	—	1086	229	4680	1031	1.14	1.30	946.73	"	0.53	5.9	91	1	"	
8465	"	14.10	14.50	5.4	5.6	13.8	1986	7882	516	71.1	445	17.8	3940	229	—	2121	319	2230	1807	1.93	3.83	950.56	"	0.45	9.1	201	7	7.016	
8466	"	14.50	15.30	5.1	5.2	11.5	2253	7832	586	67.5	518	18.7	4087	215	—	2379	306	2037	1874	1.16	2.61	953.17	"	0.40	9.5	201	4	7.016	
8467	"	15.31	16.06	4.9	5.0	11.6	2085	7867	542	62.9	479.6	16.4	3606	176	—	1999	192	2700	1660	1.11	2.32	955.49	"	0.38	8.2	207	0	"	

3:05 Reload ZDAS etc.

3:25 When we stopped for the new fill the IBM-disk was 79.6% full
During the fill apparently the dump job did not run the disk is now over 81% full

3:30 Disk is empty the max degree of filling was ~ 82.5%

3:35 Reload of ZDAS did not help no histograms 1-9 can be displayed
the NORD 50 histograms are still ok.
There will be no N 10 histograms for this shift
Experts should have a look at the problem.
hint: It is possible, however I am not sure, that instead of 'clear hist' I pressed delete histogram before the reload. Certainly not after the reload.

4:15 All histograms of run # 8449 look ok.
One noisy JETC-wire around #300. HD should look at it ~~tomorrow~~ today during daytime

5:00 The 'noisy block' in the end cap is less noisy now and the trigger rate dropped from 5 to 3.5 Hz!

5:50 LG end cap counter #185 is very noisy again. (Run 8453)

6:30 Hiproc gives no response call Eichler he cannot help via telefone.
switch Hiproc off and run without run # 8457

6:45 Trigger rate 12 Hz dead time 31% due to noisy end cap counter. Phone expert to switch it off

6:55 Stop running. dead time = 35.5% trig rate = 11.3%
8k events in 691 sec
try to get rid of noisy counter

7:07 H.V. of the bad counter in end cap was powered down to the minimum value (-1.3kV).

7.22 1 dead DLS wire # 80-88 dead
~~try to~~ phone A. Wagner ~~no success~~ : he recommends 'switch' does not help.
pushing hard on the connectors helps.

7:55 Hiproc reloaded

8.00 Eglendinning + Naroska on shift

8.05 beams dumped

8.00 Disk backup made

8.20 New fill ready, background high (~0.9) and unstable, PRR is going to change Q-value

10.00 End cap LG counter (E-8-18) on again. S.K.

10.30 Call from Herr Pillat. The heat-exchange of our magnet is clogged up again. They will have to put a clean one in today. Herr Felst talked to Pillat and got Degile's consent to do the operation now.
All experiments are told the bad news.

10.30 Experiments turned off. We run down the magnet slowly to try to save the beam. But first the positrons and then the electrons disappear.
Heat exchange is again full of calcium.

11:55 My version of the Nord 50 program is installed as default. HER

12.05 Heatexchange exchanged,
Temperature of magnet lowered to prevent fast clogging up.

13.40 Beams again high DT due to LG rate.

14.30 We lowered the H.V. of end cap lead glass counter (#E-8-18) from -1.95kV to -1.7kV. H.T. S.K. The gain is changed by factor $\approx (\frac{1.7}{1.55})^5 \approx 0.5$ of the counter

Now DT is around 11%.

16:00 Loebinger, Olsson Monday 3/8/81

17.25 New fill start run 8470 (I.D. trip due to anode current at run start).

17.32 Beam Lost.

19.45 Beam lost.

21.45 Pb glass end cap counter #185 is noisy again, but we leave it on (as per written instructions of Komamiya & Kobayashi).

22.40 16M link error 54 (140000).
After a couple of tries, manage to start new run, all now O.K.

0:00
04/08/81 Elsen & Kanzaki on shift

0.00 Beams lost

0.19 New fill. Start run 8482

2:30 JETC high current. Faulty part #94. It continue.

8:10 Spurious Anode current alarm from JETC. Alarm is only set in alarm register. Reset and run up again

4:45 Beams lost.

RUN	DATE	START	STOP	I+	I−	DEAD TIME (%)	TIME (s)	RECORDS OUT	ALL TRIGS ×10⁴	TØ RESECT ×10⁴	TØ ACCEPT ×10⁴	T1 ACCEPT ×10⁴	T2 ACCEPT	T3 ACCEPT	T2 3 TOF 3 TR	T2 COLLIN	T2 ≥2 TOF LG>1 ≥2 TR	T1 ACC LG>4
8468	3.8.81	16.05	16.39	4.7	4.8	19.5	1953	7879	508	63.6	444.9	13.5	3023	186	—	1725	166	3550
8469	3/8/81	16.39	17.02	4.6	4.6	10.1	1338	3976	348	35.1	313.1	8.7	1982	116	—	1235	147	1182
8470	3/8/81	17.25	17.31	6.2	6.1	15.2	297	1313	77.2	11.7	65.5	2.7	677	39	—	350	78	322
8471	″	17,52	18,27	5,4	6.0	13,9	2053	7870	534	74,0	460	18,4	4095	239	—	2095	280	1994
8472	″	18,29	19.02	5,6	5,7	12,4	1958	7887	509	63,2	446	16.9	3719	182	—	2001	267	2603
8473	″	19.02	19.39	5.3	5.4	11.5	2197	7881	571	65.5	506	17.7	3985	234	—	2309	400	2326
8474	″	19.39	19.42	5.3	5.4	10.8	151	617	39.2	4.2	35.0	1.2	317	7	—	208	34	169
8475	″	20,05	20:40	5,9	5,9	12,5	2077	7879	540	67,7	472,6	18,4	4030	241	—	2053	274	2047
8476	″	20.41	21.16	5,6	5,6	11.9	2089	7892	543.6	64,6	479.0	16.9	3635	212	—	1992	196	2577
8477	″	21.16	21.57	5.3	5.3	10.5	2418	7871	630	65.9	564	17.7	3824	178	-	2362	269	2278
8478	″	21.57	22.40	5.0	5.0	9.3	2530	7313	659	61.1	598	16.0	3595	167	—	2333	253	2044
8479		DOES	NOT	EXIST														
8480	3/8/81	22.44	23.26	4.7	4.7	9.9	2565	7842	667	66.1	601	18.7	4030	184	—	2493	222	1902
8481	4.8.81	23.27	23.59	4.5	4.5	10.2	1902	5033	495	50.7	444	13.1	2880	151	—	1873	158	1469
8482	4.8.81	0.20	0.54	5.7	5.6	12.1	2050	7881	533	64.7	468	15.8	3432	168	—	2017	249	2867
8483	″	0.53	1.24	5.4	5.4	11.8	1762	7881	458	54.1	404	12.3	2647	143	—	1617	202	3931
8484	″	1:25	1:49	5.3	5.2	13.0	1432	7899	372	48.2	324	9.1	2035	103	—	1296	163	4813
8485	″	1:49	2:23	5.0	5.0	10.4	2033	7799	529	55.1	474	12.9	2920	140	—	1869	218	3502
8486	″	2:23	3:12	4.7	4.6	9.7	2556	7846	665	64.3	600	16.3	3639	198	—	2330	272	2450
8487	″	3:21	4:01	4.4	4.3	12.2	2775	7881	722	88.2	634	17.6	3822	212	—	2447	515	2195
8488	″	4:00	4:42	4.2	4.1	8.4	2474	6913	644	54.3	589	13.8	3194	147	—	2170	205	2314
8489	″	5:01	5:41	5.7	5.7	10.2	2394	7852	623	63.7	559	18.0	3876	216	—	2332	280	2168
8490	″	5:41	6:28	5.4	5.3	9.2	2652	7795	690	63.2	627	17.5	3992	199	—	2527	284	2154
8491	″	6:28	7:01	5.2	5.1	8.6	1942	5471	505	43.5	462	11.7	2713	128	—	1815	176	1586
8492	″	7:09	7:56	4.8	4.7	8.8	2765	7838	720	63.6	656	17.2	3898	208	—	2534	286	2311
8493	″	7.56	8.43	4.5	4.2	10.6	2782	7821	724	77.0	647	16.3	3962	190	—	2435	331	2345
8494	″	8.43	8.47	4.5	4.2	8.3	203	546	53	4.4	48.6	1.1	271	10	—	167	14	155
8495	″	8.50	9.06	4.4	3.8	8.8	804	2130	209	18.5	190.1	4.0	1054	33	—	700	82	666
8496	″	9.32	10.02	6.1	6.1	7.9	1754	6866	456	59.3	397	14.8	3281	203	—	1801	474	2024
8497	″	10.05	10.40	5.8	5.8	12.3	2102	7872	547	67.4	479.6	17.5	3809	237	—	2190	435	2342
8498	″	10.40	11.23	5.5	5.5	13.3	2188	7865	569	75.7	493.6	17.2	3873	222	—	2203	422	2233
8499	″	11.24	12.09	5.2	5.2	11.8	2370	7869	616	72.5	544	17.3	3950	239	—	2376	372	2253
8500	″	12.10	12.48	4.9	4.9	11.4	2304	7872	600	68.1	532	18.4	4098	267	—	2452	316	2224
8501	″	12.49	13.30	4.6	4.6	11.1	2430	7844	632	69.9	562	17.9	4107	360	—	2513	291	2124
8502	″	13.30	14.15	4.3	4.3	9.7	2629	7860	684	66.4	618	18.0	4087	282	—	2573	246	2243
8503	″	14.15	14.29	4.2	4.2	9.5	715	2064	186	17.7	168	4.7	1048	75	—	663	61	580

RUN	T1 ACC (LUM)	<L> ×10³⁰	∫Ldt RUN	∫Ldt −955,49	IBM/TAPE	BEAM P.D. (V)	RESECT EVENT FRAC (%)	# BHABHA	# M.H	BEAM ENERGY (GeV)	
8468	1281	1,03	2,02	957,51	IBM	0.35	6.6	171	4	7.016	
8469	814	1.00	1.34	958.85	IBM	0,33	7.9	125	2	7.015	Beams dumped for new fill
8470	264	1.32	0.39	959.24	IBM	0.5	4.4	26	0	7.016.	Beam Lost.
8471	1818	1,25	2,56	961,80	″	0.5	9,3	224	3	″	
8472	1675	1,25	2,45	964,25	″	0,45	8.2	201	3	″	
8473	1552	1.20	2.63	966.88	″	0,45	7.8	199	5	″	
8474	118	1.24	0.19	967.07	″	0.42	?	31	0	″	Beams lost
8475	1873	1,34	2,77	969.84	″	0,5	9.3	213	2	7.016	
8476	1735	1,28	2,67	972.51	″	0,45	7,6	239	8	″	
8477	1859	1.21	2.92	975.43	″	0,42	7.5	200	3	″	
8478	1729	1.18	2.98	978.41	″	0.34	7.2	281	3	7.015	
8479						0.34					
8480	2070	1.13	2.90	981.31	″	0.34	8.4	235	5	″	
8481	1352	1.03	1.96	982.27	″	0.38	8.5	174	5	″	Beams lost
8482	1598	1.15	2.36	984.63	″	0.45	7.2	170	2	7.016	
8483	1320	1.23	2.16	986.79	″	0.36	6.0	153	2	″	
8484	1000	1.20	1.71	988.50	″	0.33	4.2	121	1	″	
8485	1450	1.22	2.48	990.98	″	0.33	6.2	203	8	7.015	
8486	1744	1.16	2.97	993.95	″	0.31	7.4	232	7	″	
8487	1853	1.05	2.93	996.88	″	0.32	7.9	219	9	7.015	
8488	1403	0.97	2.39	999.27	″	0.30	6.6	194	2	″	Beams lost
8489	1839	1.33	3.17	1002.44	″	0.44	8.3	234	2	7.016	
8490	1750	1.24	3.28	1005.72	″	0.34	8.7	251	7	″	
8491	1192	1.18	2.29	1008.01	″	0.30	7.0	196	4	7.015	
8492	1604	1.07	2.96	1010.97	″	0.30	7.3	256	6	7.016	
8493	1527	0.98	2.73	1013.70	″	0.30	9.5	213	6	7.015	
8494	103	1.01	0.20	1013.90	″	0.27	5.2	16	1	″	
8495	352	1.72	1.38	1015.28	″	0.26	6.5	59	2	″	
8496	1410	1.29	2.26	1017.54	″	0.45	7.9	199	3	7.017	
8497	1609	1.22	2.57	1020.11	″	0.4	8.5	217	5	7.016	
8498	1637	1.20	2.64	1022.75	″	0.37	8.1	213	2	″	
8499	1600	1.17	2.77	1025.52	″	0.38	7.9	207	10	7.015	
8500	1598	1.10	2.54	1028.06	-	0.40	8.2	205	9	″	
8501	1523	1.07	2.60	1030.66	″	0.40	8.2	191	7	″	
8502	1528	1.03	2.72	1033.38	″	0.34	7.5	246	7	7.014	
8503	393	1.76	1.26	1034.64	″	0.30	6.7	43	3	″	Beams dumped.

7:00 184 Transfer error 54 sub err. 140000 (Chicaur at HPX)

8:00 W. Bartel & P. Rowe on shift

8.40 Beam pipe current fluctuating for a minute or 2 -

8.50 Anode current trip (beams not lost)

9.03 " " " " " "

9.09 Beams dumped - sync. trouble.

9:45 Synchrotron down we had the last fill for a long time it is not known for how long.

10.02 Run 8496 stopped because of JDAS error 44 , subervor 402
Run 8497 started , no error again

10.05 Huon crates 13, 9 missing -> reset, o.k.

10.10 Synchrotron is repaired now

12.00 Anode trip — beam optimisation. Reset — as soon as we ~~do~~ turn HV back on again we get another trip. Reset → OK. Spurious.

14.30 Anode trip — beams dumped.

14.56 V34 no. 13.2 broken from start of run 8504. Found by YSPY → hole in histogram, ~~of~~ of JETC wire map. Call Heinzelmann.

15.12 Run 8504 paused whilst Heinzelmann fixes above trouble.

15.19 Beams lost anyway.

15.50 V34 fixed start run 8506

16.00 Tuesday 4/8/81 G. Heinzelmann & F. Loebinger.

Starting with run 8506 the cosmics selection is switched off in order to satisfy Kostakis wishes. will be switched on again at end of the shift.

17.20 Beams lost.

17.40 Beams back, but lost again at 17.50

19.30 Miproc error message — switched it off
Time out messages 44 subervor (0)
44 " (201)

23.00 Problem due to "cycling MIPROC" cured by the expert (Ralph Eichler)
(if it's any consolation, beams had been off for most of this period!).

5/8/81 00 Kawamuja + Eichler on shift

Above problem would not have happened if instructions of 4PARA 16 message were ~~was~~ executed.

0:38 Miproc operating again after run 8517

1:30 LG threshold adjusted for 55 mV bias level.

3:00 request new filling. Beams dumped

3:30 New fill

3:40 LG threshold adjusted for 60 mV because of the bad background condition

4:25 ID tripped because of the high background.
online limit did a jump of 1.5 Hz at trip.

6:20 Background fluctuations part of e^+ beam lost. Asks for new filling

7:50 switch cosmic rejection on

7:48 New fill

8 00 Zhang + Fortei on shift

8 15 Beam Background optimisation. Pause.

8 19 Restart - Blips indicator fluctuating

8 33 YSPY detects hole in wire map OL8/10 - seem to be working on visual inspection - wait.

8 50 Confirm. Max problem with OL8/10 - try to contact expert.

9 [illegible] Loop background fluctuation on B.P. monitor Pause & run down ID

9 16 Run 8526 Stopped to allow Wagner to repair system.

9 22 Beam lost - start new fill.

9 48 Beam ready BP ~ 0.6.

9 51 Start run 8527.

9 52 Background optimization - Pause & turn down detect I/D.

10 [illegible]0 Background wire after optimization - now 0.7 V - consider P.K.R says they don't have from indicator.

10 09 Optimize by television ~ 0.5 V

10 10 Continue run 8527.

10 13 H.M. detects "pick up" problem in I/O. — Wagner says nothing can be done.

12, 10 IBM Busy — pause

12.11 continue.

13 42 ask for new fill at ~14 10

14 10 Run 8533 stopped Beam dumped

15 15 Magnet trip. Inform K group & P.K.R.

15 35 Trips again whilst K group were investing current.

Run	Date	Start	Stop	I^+	I^-	Dead Time (%)	Time (secs)	Records Out	All Triggers /10^6	T0 Reject /10^6	T0 Accept /10^6	T1 Accept & Postpromptt	T2 Accept	T3 Accept	T2 3 TOF 3 TR.	T2 Collin	T2 ≥ 2 TOF LG > 1 ≥ 2 TR.	T1 LG > 4
8504	4/5/81	14.49	15:07	2.1	2.0	13.4	1065	3937	277	37.2	240	10.0	1894	164	–	1096	117	1079
8505	"	5:41	15.49	6.3	6.1	13.9	476	1698	124	17.2	107	4.2	893	51	–	498	53	427
8506	"	1552	16.22	6.0	5.9	13.3	1797	8002	468	62.3	405	14.3	3129	249	–	1906	169	3420
8507	"	16.23	17.02	5.7	5.5	11.4	2356	8002	613	69.8	543	18.4	3913	377	–	2401	222	2133
8508	"	17:03	17:20			11.6	1016	3567	264	30.6	234	8.2	1758	167		1083	105	6703
8509	"	17.45	17.51			20.5	313	1446	81	16.7	65	2.9	676	91	–	367	28	335
8510	"	18.20	18:57	5.9	5.9	13.4	2163	8002	562	75.4	487	18.6	4099	332	–	2395	243	1920 ~~1940~~
8511	"	18.58	1931	5.6	5.6	11.4	1957	6839	509	58.1	451	15.3	3362	364	–	2064	187	1753
Runs	8512,	8513	8514			all	false	starts	due to	time out	problem	—	IGNORE	them				
8515	~~5~~ 8/81	23.06	23.41	5.4	5.3	9.1	2588	8002	673	61.3	611	17.3	3716	219	–	2366	182	19~~04~~45
8516	5/8/81	23:10	0:38	5.1	4.9	9.2	2835	8002	737	68.1	669	17.1	3821	197	–	2702	215	2157
8517	"	0:38	1:28	4.8	4.6	9.0	2969	8002	772	69.1	703	16.6	3902	190	–	2649	186	2320
8518	"	1:29	2:16	4.5	4.3	9.2	2824	8002	734	67.6	667	15.0	3768	183	–	2558	337	2523
8519	"	2:17	2:58	4.2	4.1	8.9	2438	7053	634	56.2	578	12.8	3246	146	–	2136	378	2414
8520	"	3:36	4:11	5.9	5.9	13.6	2130	8002	554	75.6	478	16.9	3877	216	–	2178	483	2255
8521	"	4:12	4:50	5.5	5.6	12.7	2155	8002	560	67.5	492	16.3	3687	221	–	2167	446	2369
8522	"	4:50	5:24	5.3	5.4	12.3	2013	8002	524	64.5	460	16.0	3432	195	–	1943	457	2523
8523	"	5:24	6:03	5.0	5.1	11.2	2255	8002	587	65.5	521	16.4	3602	194	–	2158	416	2360
8524	"	6:04	6:25	4.2	4.9	12.7	1050	3956	273	34.6	239	7.9	2077	90	–	1133	309	1157
8525	"	7:55	8:39	5.7	5.9	17.8	1993	7704	518	92.3	426	11.3	3982	209	–	2028	572	2950
8526	"	8:39	9:13	5.4	5.6	13.9	1023	4366	266	36.9	229	9.4	2168	118	–	1068	359	1675
8527	"	9:49	10:33	5.6	5.7	16.4	1869	7888	486	79.8	406	17.7	4380	277	–	2247	474	2260
8528	"	10:40	11:13	5.4	5.5	14.7	1974	7903	514.3	75.5	439	19.0	4429	285	–	2278	427	20580
8529	"	11:13	11:47	5.1	5.2	14.6	1981	7873	516	75.5	440	18.1	4307	340	–	2279	433	20470
8530	"	11.47	12:24	4.9	5.2	14.4	2021	7881	526	75.6	450	18.8	4244	353	–	2314	399	20313
8531	"	12:26	1259	4.6	4.7	14.4	2073	7883	540	77.5	463	19.3	4321	404	–	2309	357	19196
8532	"	13:00	13:35	4.4	4.5	14.4	2087	7883	543	78.4	465	19.1	4281	492	–	2329	330	17615
8533	"	1336	14.09	4.2	4.3	13.7	1957	7310	510	70.0	440	18.3	3931	462	–	2102	749	16755
8534	"	19:05	19:42	5.3	5.4	36.9	2012	7611	523	193	330	11.4	2644	261	–	1522	162	3939 ~~4020~~
8535	"	19:45	20:45	4.9	5.0	12	3013	7785	785	94	690	17.9	4064	298	–	2720	173	2595 ~~3506~~
8536	"	20:45	21:06	4.8	4.9	7.2	1190	2915	310	22.2	288	7.7	1551	114	–	1032	72	879
8537	"	21.34	22.02	5.9	6.1	18	1498	7916	390	70	320	16	3307	189	–	1642	165	2903
8538	"	22:03	22:32	5.7	5.8	15.8	1590	7206	414	65.6	348	17.7	3682	203	–	1891	173	1678
8539	"	22:35	23:06	5.4	5.5	13.7	1986	7891	516	70.7	445	19.7	3967	224	–	2157	198	1837
8540	"	23:07	23:39	5.1	5.2	14.5	1902	7893	495	71.9	423	20.	3905	247	–	2038	163	1879

T1 Lumi	$\langle \mathcal{L} \rangle$ /10^{30}	$\int \mathcal{L}\,dt$ Run	$\int \mathcal{L}\,dt$	IBM or Tape	Beam Pipe /N	Reject Event Fraction %	# Bhabha	# Multi Hadron	Beam Energy /GeV	Your Comments :
891	1.24	1.32	1035.96	IBM	0.5	7.9	110	5	7.017	Heinzelmann fixing V34 no. 13.2 . Beams lost anyway
357	1.19	0.57	1036.53	"	0.4	8.8	51	0	"	
1279	1.23	2.22	1038.75	"	0.4	5.3	159	3	7.016	
1695	1.22	2.88	1041.63	"	0.4	6.3	241	4	"	
740	1.16	1.18	1042.81	"	10.4	4.8	98	1	"	beams lost
304	1.10	0.34	1043.15	"	0.5	~~7.4~~	27	1	7.017	beams lost.
1846	1.21	2.63	1045.78	"	0.5	7.4	212	6	7.017	
1509	1.21	2.36	1048.14	"	0.4	6.1	201	2	7.016	
										beams lost.
1742~~596~~	1.16	3.01	1051.15	"	0.5	0	244	5	7.016	
1616	1.03	2.91	1054.06	"	0.3	2.5	254	3	-"-	
1614	1.02	3.02	1057.08	"	0.2	5.4	231	1	7.015	
1410	1.01	2.84	1059.92	"	0.2	4.9	229	3	7.014	
1139	0.94	2.29	1062.21	"	0.2	5.0	181	1	7.014	beams dumped
1631	1.17	2.49	1064.70	"	0.3	8.0	193	4	7.017	
~~234~~ 1651	1.19	3.0	1067.70	"		6.6	191	7	7.016	
1741	1.17	2.35	1070.05	"	0.35	6.3	173	3	"	
1736	1.07	2.41	1072.46		0.3	6.2	191	5	7.015	
665	0.93	0.97	1073.43		0.3	7.0	82	1	7.015	beams dumped
1636	1.16	2.31	1075.74	IBM	0.4	9.5	162	7	7.016	
915	1.16	1.19	1076.93	"	0.4	12.0	97	0	"	Beams lost
1495	1.21	2.25	1079.18	"	0.48	10.4	200	4	"	
1591	1.18	2.32	1081.50	"	0.44	10.5	197	10	"	
1571	1.12	2.22	1083.72	"	0.44	10.1	181	9	"	
1526	1.05	2.13	1085.85	"	0.44	9.5	164	9	"	
1574	0.98	2.04	1087.89	"	0.44	10.5	167	4	7.014	
1526	0.97	2.02	1089.91	"	0.42	10.0	161	2	7.014	
1402	0.85	1.66	1091.57	"	0.42	10.3	138	7	7.014	Beam Dumped.
1009	0.56	1.12	1092.69	"	0.31	6.9	75	3	7.018	J. DUMP SOG RUNNING ON IBM.
1324	0.66	2.00	1094.69	"	0.26	8.2	150	9	7.018	
499	0.64	0.77	1095.46	"	0.22	7.5	62	7	7.018	beams dumped
1881	1.03	1.54	1097.00	"	0.42	9.4	126	2	7.016	
2156	1.16	1.85	1098.85	"	0.53	11.5	148	9	7.016	RUN STOPPED DUE TO STRANGE LOSS OF TRIGGERS.
2276	1.08	2.15	1101.00	"	0.43	10	175	5	7.016	Run
2307	0.97	1.84	1102.84	"	0.43	10.5	141	8	7.016	

15.45 Magnet back on. Inform PKR.
15 57 Injection starts
16^{00} / 5.8.81 R. Hedgecock + A. Wagner
W.B. phones : no IBM for next 30 min
machine in state of injection.
16^{28} short break ← 19^{00} Hellenbrand replaces Wagner
19^{05} beams again
background optimization via telephone (Haller at PKR) brings improvement in bg
PKR says, there are problems with separator plates. Machine can not run at optimal conditions ⇒ Lumi = low. They try to get the experts.
19^{30} during RUN 8534 "IBM BUSY" most frequently ⇒ deadtime 37%
perhaps caused by JADEDUMP running at the same time
20^{00} IBM Busy still appearing at frequent intervals.
20^{10} JADEDUMP ended and IBM busy flag with it. Lovely coincidence ???
21^{05} PKR cured problem with separator plates.
They hope to improve luminosity in a new fill.
All experiments agree in dumping the beams.
We stopped RUN 8536.
21:30 beams back again.
21:37 RUN 8537 started.
22:00 Heine replaces Hellenbrand
22^{15} ID TRIPPED anode current.
22^{35} No trigger so we stop Run 8538 and start Run 8539 so ok
22^{50} Standard histograms checked. They look ok
23^{20} background jumps a little bit; Schram in PKR tries to cure it, but it is very difficult
23^{50} the DOAD feels that D. Cords is coming: Error 45 Subroutine Ø (trigger)
IBT-error 54, Error 44 Subroutine 703 ...

00.00 Thursday 6/8/81 Dieter Cords & Fred Lobinger

⇒ Could somebody please issue an edict as to which of the LUM1 & LG>4 numbers should be entered in the log-book table ? The last 3 shifts have all used different convention !

1.55 New fill planned for 02.00, but PETRA beat us by 5 mins (beams lost).

We have had a couple of occasions where there were suddenly no triggers (for no observed reason). Pausing and continuing the run clears the fault.

4.40 YSPY detects holes in I.D. hit map. — Expert (Nozaki) called.
This fault occurred during run 8547. — " " arrives.
During run 8548 cables were interchanged in attempt to trace fault. This run should therefore not be used as data.
5.20 Run 8549 started (still 24 missing wires) & stopped for DL8 replacement.

6.10. DL8 changed run 8550 started

6.45 TOF histogs for run 8550 show spikes in the mean TDC & mean ADC.
These histogs were perfectly normal for all runs up to 8550.

8^{00} Bowdery & Haidt on shift
5) After optimization of beam still > 0.3 beam current
10.00 We switched off the ID because of high currents. PKR said they had changed the RF frequency, found it to be worse and changed it back. We then restarted the ID.
10.30 CAMAC timeout problem occurs due to an overloaded DL8 crate.
NORD 10 crashed soon afterwards for no apparent reason. We had to restart it and lost the run summary for run 8553.
11:35 2 ID trips because of positron beam loss.
We request a new fill for 12:00.
14:20 YSPY claims that DL8 #109 is not working. We call Hellenbrand.

15:16 Beams lost for no known reason (PKR says)
15:45 Tagging LG pedestal subtraction disabled. Effective after run 8559 !!!

16:00 W. Bartl & N. Goddard
16:45 Positron wrong by 20 ns ask PKR to readjust the beam signal. They did it. It is ok now.
~~You can find out whether the positron pulse is in the right~~
and me: position from Hist #1 of THRON. Compare the peak position

28 Run	DATE	START	STOP	I^+	I^-	DEAD TIME (%)	TIME (SECS)	RECORDS OUT	ALL TRIGGERS $\times 10^6$	Tϕ REJECT $\times 10^6$	Tϕ ACCEPT $\times 10^6$	T1 ACCEPT +HOSTAGE $\times 10^6$	T2 ACCEPT	T3 ACCEPT	T2 3TOF 3TR	T2 COLLIN	T2 $\geq$ 2TOF LG$>$1 $\geq$ 2TK	T1 LG $>$4 ACC
8541	5/8/81	23.29	00.21	4.9	4.9	12.5	2480	7857	645	80.9	565	18.5	4180	208	-	2452	237	2176
8542	6/8/81	00.21	1.04	4.6	4.7	9.7	2581	7829	671	65.4	606	17.8	3981	183	-	2507	233	2290
8543	"	1.05	1.50	4.4	4.4	9.4	2714	7819	706	66.1	640	17.5	4085	177	-	2572	289	2239
8544	Halted 1 min (before beams lost) IGNORE																	
8545	6/8/81	2.42	3.21	5.7	5.7	11.5	2325	7864	605	69.4	536	15.6	3453	189	-	2170	258	2583
8546	"	3.21	4.06	5.4	5.4	15.8	2666	7829	694	109	584	16.5	3630	198	-	2335	299	2351
8547	"	4.06	4.49	5.1	5.1	10.0	2550	7849	663	66.6	597	16.6	3560	192	-	2277	277	2407
8548	DL8 problems being investigated IGNORE																	
8549	6/8/81	5.22	5.34	4.8	4.8	10.1	688	2033	179	18.1	161	4.5	1018	45	-	648	67	583
8550	"	6.07	6.39	4.6	4.4	8.4	1914	4885	498	41.7	456	9.5	2272	89	-	1589	166	1537
8551	"	9:02	9:34	5.5	5.8	15.4	1952	7893	508	78.4	429	18.2	3935	245	-	1936	422	2153
8552	"	9.35	10:14	5.2	5.5	13.4	2162	7893	563	75.5	487	18.8	3930	389	-	2154	329	1992
8553	"	10:15	10:30?	24.4	24.9	13.0	543	~1852	141	30	110		804	66	-			
8554	"	10:49	11:33	4.4	4.9	13.1	2295	7862	597	78	519	20.2	4015	589	-	2266	175	1873
8555	"	11.38	12.05	2.2	4.7	8.6	1454	3198	278	33	345	8.0	1878	168	-	1271	89	926
8556	"	13:28	14:06	5.7	5.6	17.1	1905	7894	496	8.5	411	20.6	4419	444	-	2224	119	1589
8557	"	14:06	14:30	5.4	5.0	13.6	1396	5307	363	50	314	14.5	2963	305	-	1581	87	1052
8558	"	15:11	15:16	?	?	9.4	255	678	66.5	6.3	60.2	1.33	318	21	-	256	18	186
8559	"	15:41	16.11	6.1	6.0	17.3	1766	7903	458	78	380	16.5	3626	487	-	1862	150	2467
8560	"	16:11	16:51	5.8	5.7	11.3	2327	7862	605	72	533	18.2	3823	475	-	2455	138	2044
8561	"	16.51	17.33	5.4	5.3	12.0	2328	7857	605	72	533	17.2	3824	334	-	2498	136	2231
8562	"	17.40	18.18	5.1	4.9	12.6	2247	7854	584	73	511	18.0	3794	421	-	2283	134	2208
8563	"	18.19	19.03	4.8	4.5	11.0	2590	7811	674	74	600	18.1	3948	437	-	2617	121	1476
8564	"	19.03	19.29	4.6	4.4	9.5	1507	4193	392	37	354	9.9	2119	225	-	1383	69	1034
8565	7/8/81	2.52	3.25	5.8	5.8	12.4	1986	7877	517	64	453	15.7	3382	189	-	1973	264	2643
8566	"	3.26	3.29	5.7	5.7	11.3	197	773	51.4	5.8	45.5	1.5	321	15	-	190	43	246
8567	Shot test for Process Cycle - IGNORE																	
8568	7/8/81	4.17	5.01	5.1	5.0	12.9	2670	7831	695	90	605	15.7	3605	192	-	2333	318	2418
8569	"	5.02	5.45	4.8	4.7	10.9	2594	7844	675	74	602	17.3	3752	205	-	2399	291	2195
8570	"	5.46	6.29	4.5	4.4	9.6	2587	7818	674	64	609	16.0	3520	168	-	2288	252	2723
8571	"	6.30	6.52	4.4	4.2	7.4	625	1691	163	12.1	151	3.5	780	31	-	546	47	575
8572	"	7.14	7.35	4.1	4.0	11.6	1248	3159	325	38	287	6.1	1566	56	-	1039	108	1057
8573	"	9.07	9.44	5.7	5.7	10.7	2221	7858	578	61	516	14	3648	184	-	2106	614	2423
8574	"	9.54	10.26	5.6	5.4	10.4	2301	7861	499	62	437	14	3702	192		4171	517	2683
8575	"	10.26	11.04	5.1	5.1	9.5	2123	7867	552	52	500	12	3072	164	-	1995	347	3379

29 Run	T1 LUMI ACC	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Run	$\int L dt$	IBM/TAPE	BEAM PIPE (V)	REJECT EVENT FRACTION (%)	# RHABHA	# MULTI-HADRONS	BEAM ENERGY (GEV)	COMMENTS?
	1726	0.91	2.25	1125.09	IBM	0.40	9.6	216	5	7.016	
	1642	0.88	2.27	1127.36	"	0.30	8.3	188	3	"	
	1550	0.84	2.28	1129.64	"	0.28	7.8	198	4	"	
											beams lost
	1732	1.18	2.74	1132.38	IBM	0.30	7.1	218	6	7.016	
	1798	1.04	2.76	1135.14	"	0.28	7.6	211	6	"	
	1823	1.07	2.73	1137.87	"	0.25	7.2	239	5	"	
						0.25					
	484	0.98	0.67	1138.54	"	0.23	8.2	56	4	7.015	
	1044	0.99	1.89	1140.43	"	0.23	7.1	148	3	"	Beams dumped for new fill
	1822	1.08	2.11	1142.54	"	0.35	10.8	162	9	7.016	
	1874	1.11	2.39	1144.93	"	0.35	9.7	177	3	"	
					"	0.35				"	Run summary lost. These numbers are from the trigger box
	1749	1.12	2.57	1147.50	"	0.35	9.9	164	2	"	Partial beam loss at end of run.
	343	0.38	0.55	1148.05	"	0.25		44	0	"	Beams dumped
	1993	1.06	2.03	1150.08	"	0.35	12.2	169	3	"	
	1303	0.98	1.36	1151.44	"	0.35	9.7	105	0	"	Run stopped to fix DL8
	134	0.89	0.23	1151.67	"	0.22	-2.0?	14	0	"	Beams lost soon after we were UP
	1683	1.23	2.17	1153.84	-	0.4	9.4	170	3	"	
	1806	1.22	2.84	1156.68	-	-0.55	7.6	230	3	-	
	1683	1.12	2.62	1159.30	-	0.35	7.6	223	2	-	
	1766	1.07	2.41	1161.71	-	0.31	8.4	201	4	-	
	1755	0.96	2.49	1164.20	-	0.27	7.4	230	4	-	
	983	0.62	1.34	1165.59	-	0.25	7.7	117	4	-	
	1798	1.16	2.30	1167.89	"	0.30	7.5	195	5	7.017	
	172	1.14	0.22	1168.11	"	0.30	4.0	21	1	"	
					"	0.28					
	1738	1.06	2.84	1170.95	"	0.28	7.7	221	3	7.016	
	1862	1.08	2.80	1173.75	"	0.26	7.9	240	4	7.015	
	1623	0.96	2.49	1176.24	"	0.26	7.6	204	7	"	
	352	0.98	0.61	1176.85	"	0.23	6.7	59	1	"	
	538	0.77	0.97	1177.83	"	0.20	6.6	76	2	"	Beams dumped for new fill
	~~1551~~ 1678	1.21	2.68	1180.51	4	0.25	8.0	223	7	7	
	1678	1.21	2.78	1183.32	4	0.2	7.2	211	2	4	
	1316	1.35	2.88	1186.20	4	0.2	6.0	201	6	7	

~~for proton runs. The peak should be centered around 142~~
a big jump by 20 ns is indicated by a red light on the 'traffic light' into the electronic department.

17:45 NORD40/50 hang up.
H.D. says: Terminal caused the hang up. Reload NORD
In fact we did not need to reload (it didn't help). Turning the Control terminal OFF & ON cured it - apparently this high voltage sparking problem. (HEM)

19:00 The peak of hist #1 in YHRON is now in the old position however PKR claimes that the bunch marker is wrong now by 18 ns. It is triggering the wrong bucket. In the next fill they are going to readjust the signal to the correct bucket in order to guarantee proper functioning of the feed back system. Tomorrow the expert Pastold should have a look at the system

19:30 Short break: computer for PIA down
21:30 Injection
23:30 e^+ are back up again, switch on magnet.
The fans in the hall are going at full power to cool down the hall.

7-8-81 0:00 F. Krebnig and R. Felst on shift

02:00 vacuum leak (rather small) in the arc between W and NW
PKR will try to go on and fix it in the day shift

02:45 Why have only 8553 nearly all events "TAGG" have the 64 LG ADC's" O.K. see comment on page 27 15:45

02:55 beam optimization finished, start luminosity run

03.25 Buzzing from bottom lead glass crate (branch 2, crate 7)

This eventually caused time outs.
We replaced the CAMAC power supply, but repeated efforts to switch it on resulted in "OVERLOAD" & more buzzing. However, in presence of Japanese experts, the crate magically is switched on successfully.

6:45 ID dumped with message on screen: "fatal High Current", no signals set in the Runbranch but unable to reset. Phone the great expert A. Wagner who got a "Verdacht" and is coming now.
His Verdacht was correct, fault was due to a voltage comparator which had tripped due to the relatively "cold" night

7.40. Beams dumped for new fill.
8.[illegible] Ovitto + Heinzelmann on shift
8:[illegible] Beam failed
8:17 Beam lost, 2D trips. During frequency setting beam lost.
9.00 Nozaki on shift
9.06 New fill is ready
10.23. ID alarm Anode current
10.38 " "
10:45 JOBS ERROR 000046 'SUBERR octal 1 (OCT) TASK 1

13:15-45 Problem with PETRA interlock system, power supply etc.
15:[illegible] ~~Beam~~ Petra still off

7.8.81 / 16:[illegible] S. Kawabata + A. Wagner
18:10 wire 467 missing - no action.
18:24 IBM transfer error 54_8, subcrror 140000_8, err.cnt 5_8. Try again → ok
21:05 IBM transfer error. Try again → O.K.
22:10 The same (IBM transfer error happens again!! Try again → O.K.
22:43 PKR ~~wants~~ tries to optimize our luminosity → ID trips
8.8.81 Goddard and Hellenbrand on shift
0:00 beams lost during optimisation
SHORT BREAK till 1:45
VAKUUM PROBLEME till 2:05
2:05 Injection started

32 RUN	DATE	START	STOP	I^+	I^-	Dead Time (%)	Time (sec)	Records OUT	All Triggers $\times 10^6$	TΦ Reject $\times 10^6$	TΦ Accept $\times 10^6$	T1 Accept *Prescale $\times 10^6$	T2 Accept	T3 Accept	T2 3TOF 3TR	T2 collin	T2 2TOF 1G71 2TR	T1 Lego (accept)
8576	7.8.81	11:05	11:46	4.8	4.8	8.4	2495	9832	649	50	595	14	3499	223	–	2292	315	2990
8577	"	11:47	12:29	4.5	4.6	8.6	2683	7815	646	59	540	18	3389	279		2276	343	2996
8578	"	12:30	13:13	4.3	4.3	8.5	2610	7837	679	58	621	16	3718	260		2362	303	2996
8579	"	16:15	16:55	6.3	6.3	18.0	1435	7917	373	~~206~~ 6.7	306	9.5	2232	278	–	1400	181	~~4683~~ 4683
8580	"	16:55	17:25	5.6	5.7	16.7	1774	7898	461	77.1	384	11.4	2533	353	–	1648	186	~~2737~~ 4107
8581	"	17:26	17:50	5.4	5.5	13.6	1469	7908	382	51.8	330	9.1	1991	330	–	1300	114	~~2954~~ 4802
8582	"	17:51	18:19	5.3	5.3	14.4	1715	7912	446	64.3	382	10.5	2475	247	–	1664	191	~~2922~~ 4286
8583	"	18:19	18:59	5.2	5.2	14.0	2312	7840	602	83.9	518	11.5	2892	354	–	2051	212	~~2751~~ 3725
8584	"	18:59	19:37	4.9	4.9	10.1	2235	7848	582	52.3	586	10.5	2780	291	–	1992	200	~~2737~~ 3902
8585	"	19:37	20:22	4.7	4.6	9.1	2618	7850	681	61.9	619	11.5	3071	208	–	2158	206	~~2661~~ 3640
8586	"	20:23	20:29	4.3	4.3	9.1	378	983	98	8.9	90	1.6	484	33	–	337	26	~~3209~~ 3209
8587	"	21:01	21:43	5.6	5.7	13.4	2254	7842	587	78.4	508	15.8	3684	243	–	2283	295	~~2704~~ 3043
8588	"	21:43	22:22	5.3	5.4	13.5	2289	7867	596	80.3	516	15.5	3682	243	–	2307	297	2777
8589	"	22:22	23:03	4.9	5.1	10.5	2284	7862	593	63.1	531	13.7	3337	148	–	2104	487	3286
8590	"	23:03	23:42	4.9	5.0	12.0	2181	7860	568	67.8	499	11.9	3042	154	–	1950	467	3717
8591	"	23:42	0.02	4.6	4.7	13.5	1128	4359	294	37	254	8	2075	112		1080	407	26997
8592	8.8.81	3:51	4:17	5.0	5.3	14.8	1566	7904	407	60	347	11.6	2968	164	–	1592	553	3944
8593		4:18	4:48	5.8	5.1	11.5	1393	5845	362	42	320	10.7	2624	145	–	1413	324	2076
8594	"	5.06	5.32	6.0	5.8	16.4	1545	7911	402	66	336	13.3	3137	217	–	1579	590	38198
8595	"	5.32	6.02	5.7	5.6	12.4	1744	7904	457	56	397	15.7	3575	224	–	1886	629	36563
8596	"	6.02	6.34	5.5	5.3	11.8	1922	7863	500	60	440	16.4	3825	255	–	2200	561	2600
8597	"	6.35	7.03	5.3	5.1	11.0	1661	6401	432	47	385	13.3	3062	204		1799	483	28868
8598	no events																	
8599	"	11.57		4.4	5.7	16.8	1886	7938	491	83	408	18.0	4360	357	–	1637	941	2389
8600	"	12.32	12.54	4.2	5.0	30.7	823	3819	214	66	148	7.2	2644	176	–	889	563	940
8601	"	1447	1456	5.7	6.0	21.8	89	439	23	5	18	0.7	182	10	–	110	13	132
8602	8.8.81	16:45	17:20	5.4	6.4	16.9	1905	7894	496	84.0	412	17.3	4749	463	–	2124	485	2109
8603	"	17:20	17:55	4.9	5.6	14.6	2015	7862	525	76.7	448	17.6	4997	407	–	2562	614	2360
8604	"	17:55	18:34	4.9	5.6	17.9	2305	7695	600	71.7	528	16.8	4518	286	–	2643	568	2330
8605	"	21:14	21:39	6.0	6.1	12.2	1406	4958	366	44.6	322	11.4	2444	149	–	1442	209	1570
8606	"	22:55	23:30	6.18	6.61	16.4	2076	7867	540	88.8	452	18.0	3850	261	–	2106	310	2439
8607	"	23:30	00:16	6.24	6.24	25.6	2618	7871	681	174	507	17.1	3574	215	–	2226	264	2789
8608	9.8.81	00:16	00:54	5.5	5.5	12.2	2261	7859	588	71.9	516	16.1	3618	201	–	2268	349	2915
8609	"	NO DATA – NO RUN SUMMARY																
8610	"	00:54	01:34	5.2	5.1	9.2	2362	7864	614	56.7	557	15.7	3706	212	–	2320	415	2948
8611	"	01:34	01:43	5.2	5.1	9.3	259	935	67	6.2	61	1.7	398	26	–	273	53	379

33	T1 Lumi (accept)	$\langle E \rangle \times 10^{30}$	$\int Ldt$ Run	$\int Ldt$	IBM / Tape	Beam Ripple (V)	Reject Event Fraction (%)	# Bhabha	# Multi hadron	Beam Energy (GeV)	Comments
	1538	1.09	2.82	1188.92	IBM	0.19	7.0	246	5	7.015	
	1428	1.02	2.53	1191.45	"	0.18	6.8	220	6	7.015	
	1289	0.88	2.29	1193.74	"	0.17	6.8	169	5	7.015	
	~~780~~ 771	1.09	1.57	1195.31	IBM	0.4	4.5	119	3	7.017	
	~~944~~ 959	1.10	1.96	1197.27	"	0.26	4.5	183	7	"	
	~~788~~ 772	1.12	1.65	1198.92	"	0.26	3.7	160	4	"	
	~~911~~ 895	1.08	1.85	1200.77	"	0.28	4.4	146	5	7.016	
	~~961~~ 946	0.96	2.23	1203.00	"	0.23	5.4	211	4	"	
	~~926~~ 918	0.99	2.20	1205.20	"	0.21	3.3	210	2	7.015	
	~~1003~~ 1003	0.93	2.44	1207.64	"	0.21	5.3	196	7	"	
	~~134~~ 134 ~~0.87~~ ~~0.35~~		0.33	1207.97	"	0.20	5.2	25	2	7.014	
	1289	1.18	2.65	1210.62	"	0.35	7.0	208	2	7.016	
	1301	1.00	2.28	1212.91	"	0.35	7.4	188	9	"	
	1052	1.45	3.31	1216.22	"	0.28	6.5	204	4	7.015	Luminosity of this run can't be trusted: some beam loss during optimization.
	903	1.07	2.34	1218.56	"	0.26	5.8	147	4	"	
	476	0.80	0.90	1219.46	"		9.8	78	2		beams lost
	878	0.95	1.48	1220.94	IBM	0.4	7.0	119	4	7.016	
	936	1.06	1.47	1222.41	"	~0.4	8.7	134	2	"	beams dumped
	1254	1.17	1.80	1224.21	"	~0.35	7.8	129	2	"	
	1405	1.19	2.07	1226.28			9.0	160	1	"	
	1429	1.12	2.15	1228.43		0.4	8.8	202	5	"	
	1051	1.10	1.82	1230.25	~~TAPE F11110~~	0.4	8.3	151	5		beams lost
	1030	0.75	1.42	1231.67	TAPE F11110	~0.35		119	2	7.016	DL8 problem
	348	0.67	0.55	1232.22	IBM		20.8	41	1	"	beams dumped
	52	1.24	0.11	1232.33	"	0.4	9.5	8	0	"	beams lost
	1126	0.84	1.61	1233.94	"	1	14.5	121	1	"	
	813	0.79	1.60	1235.54	"	0.4	10.3	163	7	"	
	828	0.78	1.79	1237.33	"	0.3	7.8	170	5	"	beams lost
	879	1.07	1.60	1238.83	"	0.45	7.3	133	3	7.017	beams lost
	1592	1.09	2.26	1241.09	"	1.0	9.3	185	9	"	
	1340	0.96	2.52	1243.61	"	0.45	7.1	227	4	7.016	
	1242	1.05	2.37	1245.98	"	0.42	7.1	202	4	7.016	
						0.39				"	RUN ABORTED – JOBS ERROR 44 - 206 ?
	1192	1.01	2.39	1248.37	"	0.39	7.2	203	7	"	
	125	0.92	0.24	1248.61	"	0.38	0.7	21	1	"	BEAMS LOST.

8.8.81

4:00 Heintzmann replaces Hellenbrand

4:45 high beam pipe current. → soft ID trip. PKR tries to optimize background → no success.
PKP decides to dump the beams.

8.30 Haidt & Minowa on shift

Problems with PETRA & DORIS magnets – ramp foreseen at 9.30

11.30 Start runs: use MAG tape since IBM ERROR 54 occurs too frequently TAPE: F11 110

Beam pipe current fluctuates

12.10 4 YSPY error: DLB dropout – A. Wagner came and fixed it Power supply for V34 segment 5,6 - ring 1+2 had tripped.

12.52 Due to bad beam conditions ask PKR for new filling

14.40 Filling ready. Big fluctuations

14.55 PKR has to optimize again

14.57 Beam lost

15.40 Next filling. MARK J magnet failure implies very bad conditions for us. Ask PKR to optimize for us, but not sufficient.

16:00 Cords & Kaneko on shift.

16:05 Beams lost.

16:35 New filling, but high BP current.

16:45 magnet of MARK J is powered up again (their power trip caused the last beam loss)
IP Voltage stays around 1V

16.50 ID trip. PKR admits to have fiddled with the frequency (standard practice during recent week, they claim)
We ask them not to change a thing or inform us beforehand.

18:35 Beams lost.
Water leak in the ring

19:50 leak repaired and start of injection.

20:30 New filling.

20.40 beams lost; reason unknown

21:10 New filling

21:14 Run 8605 starts.

21:40 beams lost again!
interlock broken in TAPO area

22.55 new filling

9/8/81 HEDGECOCK & HELLENBRAND ON SHIFT.

00.04 Tried to start run 8609 – DAS error 44 – 206 appeared and run aborted after several pause/continue operation attempted. New run started.

01.46 Beams dumped (LQST) mysteriously. No reason given. ID TRIPPED.

02.55 New fill ready. Run 8612 started.

04.00 HEINZELMAN REPLACES HELLENBRAND. Sadly, I love to stay. CRH

06.30 New fill ready. Run 8617 started.

07.25 Several time out (44 - 402)(44 - 403)(45 - 000)(44 - 403) then no triggers. Pause run and Nord 10 seems to hang up (08) – Restarted NORD 10 and continued with new run.
Beam background seems noisy.

07.43 ID TRIPPED, I^- Beam lost.

07.57 KURZE UNTERBECHUNG (COME BACK HARRY, ALL IS FORGIVEN)

8:00 Felst & Odaka on sift

30 Beams filled.

38 Run 8620 started

46 LG thresholds were adjusted. noise level = 65 mV

9:45 Beams lost

10.20 still trying injection, close positrons when the two beams collide

50 Injection failed again. e^+ would not circulate.

13:23 New fill. Injection was successfully finished at last, but backgrounds are still high

:24 "Background Optimization"

13.35 start to take data but machine is rather unstable and has SL = 3.35 E2P ons

:45 LG thresholds were adjusted again. noise level = 55 mV

14.15 Beams lost

15:00 "Machine Studies" started. These will last to the end of the run period

16.00 Minowa & Bowdery on shift.
We come to a gentleman's agreement over this shift. (4 hours each, starting with Bowdery.)

19.00 PKR announce a luminosity run. We try to take data but the background is fluctuating at the moment. It (the run) only lasts 87 events.

2036 A Luminosity run starts but the BP current is fluctuating.
Beams lost. No run was started.

2103 Luminosity run aaain. The background is same as before.
now, the background is ~0.3 V.
After switching on the ID, an Alarm buzzer rings immediately.
No lamp is on at the Alarm Interrupt Register. Notaus cannot be reset.
Call expert.

RUN	DATE	START	STOP	I^+	I^-	DEAD TIME (%/6)	TIME (SECS)	RECORDS OUT	ALL TRIGGERS $\times 10^6$	TΦ REJECT $\times 10^6$	TΦ ACCEPT $\times 10^6$	T1 ACCEPT +OVERLAPS $\times 10^6$	T2 ACCEPT	T3 ACCEPT	T2 3TOF 3TR	T2 COLLIN	T2 ≥2TOF LG>1 ≥2TR	T1 LG >4
8612	9/8/81	02^{54}	03^{22}	6.1	6.3	17.1	1683	7918	438	75	362	17.1	3984	265	–	1874	799	2504
8613	"	03^{22}	03^{55}	5.8	6.0	12.1	1921	7891	500	60	439	17.5	3876	287	–	2075	506	2506
8614	"	03^{55}	04^{29}	5.6	5.7	11.6	2017	7893	525	61	464	17.4	3846	286	–	2072	501	2637
8615	"	04^{29}	05^{00}	5.3	5.5	13.2	1798	7912	468	61.7	406	17.5	3901	290	–	1899	482	2425
8616	"	05^{00}	05^{29}	5.1	5.3	11.3	1718	6730	447	50.6	396	14.8	3264	219	–	1809	427	2196
8617	"	06^{33}	07^{14}	5.9	5.6	21.5	1627	7919	423	91	332	14.8	4332	295	–	1827	818	2190
8618	"	07^{14}	RUN SUMMARY WAS LOST.															
8619	"	07^{35}	07^{93}	5.7	5.55	18.5	451	2205	117	27.8	95.5	4.2	1236	74	–	558	267	673
8620	"	08^{38}	08^{48}	6.0	6.0	15.1	568	2841	147	22.3	125	5.3	1285	72	–	634	175	877
8621	"	13^{36}	14^{15}	5.0	5.5	11.3	1279	4443	332	37.7	294	8.0	2308	136		1145	164	1672
8622	"	19.05	19.06	?	?	39.4	20	87	5.2	2.1	3.2	0.05	41	1	–	12	10	9
8623	"	22.51	23^{06}	4.8	4.8	7.4	754	2009	196	14.5	182	2.2	839	29	–	600	134	855
8624	"	23.25	00.23	~~4.0~~ 4.4	~~5.0~~ 5.4	5.1	346	7751	900	46	854	7.6	3168	145	–	2390	506	3510
8625	10/8/81	00.23	00.49	4.3	3.1	6.6	1244	2823	323	21	302	2.6	1111	51	–	843	172	1266
8626	"	01.28	01.41	5.4	2.9	9.6	315	1263	82	7.8	74	1.2	420	29	–	262	77	657
8627	"	04.02	04.20	3.5	3.9	6.6	1114	2865	289	25.4	264	4.1	1493	71	–	964	263	1150
8628	"	05.27	06.08	4.8	4.8	9.3	2467	7840	642	59.6	582	3.9	1897	93	–	1532	167	5071
8629	"	06.08	06.19	4.5	4.5	7.1	293	589	76	5.3	71	0.5	256	5	–	196	16	223
8630	"	7.01		–	–	2.5	3484	4007	906	23.1	883	7949	1952	38	–	1914	87	2039
8631	"	8.03	7.59	–	–	2.8	6938	11639	1804	51.3	1763	15951	4128	80	–	3959	383	3028

RUN	T1 LUMI	<L> $\times 10^{30}$	$\int L dt$ Run	$\int L dt$	IBM / TAPE	BEAM PIPE (V)	REJECT EVENT FRACTION (%)	# BHABHA	# MULTI HADRON	BEAM ENERGY (GEV)	COMMENTS.
8612	1381	1.08	1.82	1250.43	IBM	0.53	11.1	150	2	7.017	NEW FILLING.
8613	1436	1.03	1.98	1252.41	"	0.52	9.4	176	4	7.017	
8614	1416	1.01	2.04	1254.45	"	0.45	9.6	179	2	"	
8615	1541	1.00	1.80	1256.25	"	0.6	11.2	149	2	"	
8616	1236	0.98	1.68	1257.93	"	0.42	8.8	139	4	7.016	BEAMS LOST.
8617	1215	1.01	1.64	1259.57	"	0.54	13.4	105	4	7.017	NEW FILLING.
8618						0.60				"	NORD 10 HANG UP (08) – RESTARTED.
8619	295	(ASSUME 1.43) READINGS FAULTY ???		1261.00	"	0.60	11.7	58	2	7.016	BEAM LOST.
8620	602	1.07	0.67	1267.6	"	0.50	6.6	53	2	"	"
8621	450	0.48	0.62	1262.2	"	0.4 NO.5	8.2	53	0	7.013	"
8622	3	0.21	0.00	1262.2	"	0.3+	-261?	0	0	"	Beams lost. One to forget?
8623	229	3.40	2.56	1264.76	"	0.25	4.9	51	1	7.016	Beams dumped
8624	1038	0.87	3.00	1267.76	"	0.25	5.5	256	9	"	
8625	349	1.07	1.33	1269.09	"	0.15	3.9	75	2	"	Beams dumped.
8626	123	1.09	0.34	1269.43	"	0.24	3.0	29	0	7.016	Beams dumped.
8627	149	0.34	0.38	1269.81	"	0.21	6.4	30	1	7.016	
8628	697	0.82	2.03	1271.84	"	0.18	3.0	179	4	7.016	
8629	90	~0.9	~.26	1272.10	"	0.16	5.0	20	1	7.014	Lumi #'s on run summary unreliable
8630	–	–	–	–	"	–	5.0	–	–	0	End of Data Taking June - July - August Cosmics, B=0 KG
8631	–	–	–	–	"	–	9.2	–	–	0	" "

9.8.81

Wagner is on call but cannot be reached. Found Nozaki I at the TSO. He says the temperature of the Rucksack is too low, and suggests to close the main gate of the hall and just wait.

Meanwhile, the Beam Pipe Current ~~start~~ begins to fluctuate again.

21^{45} A.W. here. Problem was indeed comparator.

" Beams dumped.

22^{32} Switch on the high voltage. BP = 0.25 - 0.6

22^{35} Switch off "

22^{51} Switch on " BP ≒ 0.25

Start run 8623

23^{10} Beams dumped.

23^{26} Switch on the high voltage. BP ≒ 0.25

start run 8624

0.00 Monday 10/8/81 Fred Lobkinger

00.45 I.D. trip : Unstable beams, leave it til beams stabilize. - They are being dumped anyway.

01.30 New beams. Start run 8626.

01.40 Soft I.D. trip : beams unstable & will be dumped.

03.30 Beams, but will wait for good evidence of stabilization before switching I.D. on.

04.00 A. Wagner

4.23 PKR wants new filling.

4.54 "short break"

5.27 beams again

during beam+background optimization: trigger rate fluctuates between 2 and 10 Hz while beam pipe current stays below 0.2 V.

6.15 extremely unstable beam. ID - trip. beam lifetimes < 1^h. All HV's off.

6.30 maintenance start

End of Datataking period June - July - August 1981

10.8.81

7^{01} start cosmic runs, B = ϕ

detector components which are read out: 77714B, ie

7 (headsc / latches / T1) 7 (BP / TOF / LG)

7 (T2 / T3 / test adc) 1 (Jet chamber) 4 (μ-chamber)

run 8630 : Cosmic reduction in N50 was ON
MP red. flag T2-trigger was ON

8631 : all red. flags off now (hopefully).

unfortunately ~ 50% of all triggers are due to famous „spinning" LG block in end cap.

8.40 T. Nozaki sept

9.20 Nowacka took off the lead glass + star trigger. Trigger rate 1.2 → 0.6 Hz

10.00 STOP the run 8631. End of the cosmic ray runs.

14.9.81

One photomultiplier was ~~exc~~ changed with new one, because the old one had been quite noisy. End-Cap 8-18. HV = -1.8 KV, Xe signal ~ 140 mV. During exchange, I found some water in the iron box of the counter, but not around the PMT itself. PMT could have been damaged by the last water flood around the end cap part.

H. Takeda.

1.10.81 → Run 8656 : ID - test runs

1.10.81 → Run 8706 : LG - test runs written to M.T.

NEWS or "Why resetting muon crates is less of a problem!"

There is now a new, easier way to reset "missing" muon crates.
Buttons have been installed on the CAMAC modules in the MUON CAMAC crate to make remote resetting possible.
Please read the notice above the Decwriter in the counting room.

10/9/81

Summer Shutdown 1981

10:30 a.m. - Volts off. Arches and sidewalls moved out.

2.10.81

In order to enable PLUTO to measure luminosity with our tagging system they have got remote control on the tagging PM's, and some features in the tagging logic stage temporarily been changed.

* This has to be changed before starting data-taking. ** Has been re-changed 5.10.81, 8:10 AM

* Also the potential extraction for the tagging PMTs has to be reinstalled.

*

5.10.81

8:00 Hellenbrand, Feist on shift

new running period starts with a temporary access, restart 20:00
Nord 10 down, R. Eichler called help

10:00 Power supply of Nord-10 down (+5V). Norsk Data is sending a spare module immediately. Should arrive today or early tomorrow. RAE

9:30 HV of ID switch on for test purposes

11:00 HV switch off

10:45 magnet was raised to 8000 A in three steps and tested for 20 min. everything was working well

16:00 Minowa & McCann on shift

6.10.81

0:00 Odaka, Wendt

4:10 Raise request on PKR-request (8000 A) → (down to 7500 A at 5:00)
HV for beam-pipe counters cannot be switched on. HV control-box gives alarm ≈ beam-pipe currents cannot be monitored. LUMI-HV switched on manually. LUMI-signals are monitored for PKR.
At present the LUMI-Rate is about 1 Hz, from that a very preliminary value for the luminosity is $\langle \mathcal{L} \rangle \approx 3 \cdot 10^{30}$ ($\langle \mathcal{L} \rangle = \dot{N} \cdot E^2\,[\mathrm{GeV}^2] \cdot 10^{28}$)
$\mathcal{L}$ was luminosity-constant for the tagging-system (because of shielding parts of the inner acceptance fig had the old constant was $7 \cdot 10^{27}$)

6:58 Magnet trip: room temperature was too high, fixed by K

8:00 Krehbiel + Hellenbrand on shift

All power supplies on disregard, BP counters all on 1600 V.

Continuous problems with BP crate (NIM), power fails every few minutes ~~Remote off for BP counters does not work you have to go to the power supply~~. Changed. It works ok. Krehbiel

∅ around 15:00 talked only the short breaks (rund 2 hrs). They (PKR) say: "a magnet polarity in the Pluto area is checked. This will take another 5 min")

lowest of three P.S.

15.30 Kr checked Power of T2-Trigger in Rucksack bc, there was a 5V-P.S. down. Main fuse was blown. I replaced the 1.6 A-träge Fuse temporarily by a 2 A-mittelträge-Fuse.

YAMADA & BAMFORD on shift

16:00 power supply replaced, test programs MULTI and MPM run o.k.
disk directory regenerated and backup-copy made.

TOF+BP with miproc-format from now on
Miproc-16 does T2-trigger check + rejection
z-vertex rejection at > ±350 mm
Please inspect z-vertex distribution of Miproc (under subcontext "RESULTS")

17.50 TOF + FWRD μ-counts - High voltages set.
Tagging not connected to remote readout and not checked by computer until H. Wendt can be found.

BP counters should be set when HV is on, they are approximately right.

If you get JDAS error 53 during pedestal run, try to reload TOF-AC2099: F19, F11, F12 TTYPORT 0, F12 TTYPORT 1. Otherwise call R. Eichler

12.30 Now tagging high voltage connected to remote control also

7/10/81

0:00 Kanzaki & McCann on shift.
We have trigger problems. Dr Krehbiel is here.

2:00 All problems now appear to be fixed — but now no beam.
When PETRA is filled, ~~so~~ PKR say they want to optimise the beams. They say this will take at least 1 hour.

5:40 New fill ready. BP current ≈ 1 Volt - 2 Volts. Not stable.
PKR are "optimising background" — so do not switch on JET chamber yet.

5:52 Optimising finished, BP current ≈ 0.5 Volt. Switch on jet ch.
JDAS error 53 / 140204 task 1. Above procedure did not fix it.
Phone Eichler — switched BP & TOF miproc. Then started.

07/10/81

6.30 Again, trouble with "HV output" alarm in rucksack.

8.00 ~~Katsumata~~ Kawabata / Wenninger on shift:
runs 8632 to 87.. all rubbish; TOF problems, ID % alarm problems (3), μ-chamber crate problems (2)
↳ experts expected to arrive

8.10 TOF-TDC has missing Q-response. Pull unit out and plug in again → works
Narodka checks HV of TOF-counters
3 ID-trips in a row, but BP-current only 0.2 Volts. ← YOU ALARM WITH NO INDICATION FROM ΔI_BP Level readjusted!
MU-Crate 8 faulty, several % tm changed. (← only soft-ware error)

9.15 Marki-J asks for 5 min access to Petra
Tasso " " 30 " " " } we agree

10.10 On request of TOKYO people prepulse was moved back by 20 nsec.
This can only be changed back by Mr Petzold or Theiß.

12.00 Petzold has changed back prepulse to original timing! (on request of B.N)

12:30 Same problem with TDC-TOF as Ris warning: ← wrong position of switch in TDC!
Scale gate cable in wrong input!
Cable wrongly connected in TDC-TOF's! Mr. Krehbiel was here!

13.00 Run 8714 still with wrong Scales cables
Run 8715 with corrected Scales cables } still without BP+TOF Miproc. We have a software problem during pedestal run.

Mr. Krehbiel — Wagner - Eichler - Cords still testing various things during run 8715.
— discriminator ~~dead~~ of counter 19. Change discrim. → works
— muon crate 8 → cell expert (reset not active): ← fixed O.K.

Run 8715 stop

~~Threshold~~ 3: not at 4 GeV/c readjust, Threshold 1: looks almost OK.
~~not changed since~~ looks similar as last run
but "forward scint. counters too high!
Mizuma checks
*
Narodka?

13:35 RUN 8716 START WITH muon constants corrected; still thresholds to be adjusted.

* FWD μ-trigger taken out by flipping switch in T1-postpone card.
T3 now rejects only 75% of total T2 postpone rate, before this was 95%
T3 acc + rej $\frac{170 \cdot 10^3}{373 \cdot 10^6}$ bef $\frac{5}{519}$
To ace

14:20 STOP RUN 8716 : VACUUM LEAK IN PETRA — THEY WANT TO DUMP THE BEAM.

14.40 LG ADC crate #1 didn't give any data. Someboby has pulled out the cable from the ADC processor, ~~to~~ which is behind the rack! Hence Run 8715, 8716 have wrong LG data.
Before the Run period all the LG eletronics were examined and were OK. Do not pull anything out from the LG systems. Minowa & Yamada

16:00 Rowe & Kobayashi on shift
16:30 starts injection

17:15 Muon crate 8 is permanently missing. Find top link between SCC/FSI wrongly connected. Now fixed. VDU not talking.
Fault has been present since ~13:15 today. AB.

Muon histograms of timing map, singles rates, chickens, dead chamber analysis missing (i.e. not filled) since start of this running period!! Change to N50 program file? — yes says R. Eichler. — apparently Howard's new routines are not linked properly. Will take ~1 day to contact Howard + correct this. Meanwhile, above histograms will remain missing.

17:30 Beams filled. BP current ~0.4 A. started run. just after pedestal run beams lost. ID tripped.
18:30 Magnet fluctuation — acknowledged: didn't repeat.
19.05 Muon Crate 8 went missing again. Read and Ready lights OK, Reset was no good. Pulled out the SCC/FSI and reconnected — OK. However this needs looking at more closely. (with power off, of course! The VDU seems now to be responding (for Austin)
19.10 ADC input for TOF counter 8 — Z is bad. Probably bad dynode output downstairs. Trigger input is OK.
19.30 Muon crate 8 again. Whilst I was seeing to it ZDAS went down. When we brought it up again, muon crates were OK. (Before, we got a μ-chambers time out error) / LG thresh. set to 50 mV

RUN	DATE	START	STOP	I⁺	I⁻	DEAD TIME (%)	TIME (secs)	RECORDS OUT	ALL TRIGGS ×10⁶	T0 REJECT ×10⁶	T0 ACCEPT ×10⁶	T1 ACCEPT +POSTRN	T2 ACCEPT	T3 ACCEPT	T2 3TOF 3TR.	T2 COLLIN	T2 ≥2TOF LG₁,₇₁ ≥2TR.	T1 LG₁>4
8715	7.10.81	13:05	13:33	4.9	4.8	15.7	1346	7013	442	70	373	7.9	4040	4411	–	1606	812	4156
8716	"	13:36	14:21	4.2	4.1	12.0	1656	5159	529	63	465	8.0	4144	2301	–	1801	858	10632
8717	Lost beams almost immediately · Sheet lost																	
8718	Lost record							~4500										
8719	7/10/81	19.31	21.09	4.1	5.3	7.5	4847	8002	1485	111	1374	24.6	9997	–	–	5308	2086	3409
8720	"	21-10	21-22	3.9	5.2	6.5	596	870	183	12	171	2.6	1069	–	–	644	207	399
8721	"	21:31	22:18	3.4	4.5	4.7	2436	2913	730	34	659	7.7	3308	–	–	2274	542	1431
8722	8/10/81	00 49	2 07	7.02	7.70	10.3	3868	8002	1215	125	1090	25	11172			4938	2665	3592
8723	"	02 08	3 49	5.38	5.82	6.6	5166	8002	1576	103	1472	21.0	9689	–	–	5411	2016	3802
8724	"	03 50	4 40	4.01	4.41	4.0	2977	3331	878	35	843	6.8	3497	–	–	2888	544	1622
8725	"	05 25	06 56	7.55	7.84	10.5	3762	8002	1185	125	1060	29.2	10410	–	–	5252	2615	3677
8726	"	06 56	08 36	4.1	4.3	5.2	5169	7018	1553	81	1472	18.7	7346	–	–	5088	1325	3511
8727	"	08 33	08 45	4.1	4.2	4.7	301	346	86	4	82	0.8	358	–	–	253	54	152
8728	"	08 45	08 56	4.1	4.2	4.1	579	606	170	7	156	1.5	682	–	–	502	116	301
8729	"	11 00	11 23	7.66	7.85	20.5	890	2184	319	65	254	6.7	2860	–	–	1281	810	910
8730	"	11 24	11 38	6.6	6.7	35.6	491	1149	218	77	140	3.2	1261	–	–	670	381	512
8731	"	11 39	12 05	6.1	6.2	19.3	1165	2125	402	77	324	6.7	2403	–	–	1275	608	1078
8735	"	1203	1238	5.5	5.6	59.6	574	1551	409	244	165	3.2	1235	–	–	669	275	772
8736	"	12 39	12 50	0.1	0.1	99.9	7	337	123	123	0.18	2002	2	–	–	1	0	135
8737	"	15:04	15:45	7.9	7.7													
8738	"	15:58	16:06	7.3	7.1	10.6	278	588	91	9.6	81.4	2.2	695	–	–	349	201	249
8739	"	16:09	16:30	6.7	6.6	9.7	1109	2128	345	33.6	311.6	8.3	2765	–	–	1442	627	1259
8740	Empty Test Run																	
8741	"	16:38	17:33	5.7	5.5	7.7	2771	4782	842	647	777.4	16	5333	–	–	3156	752	2136
8742	"	17:33	17:58	5.3	5.2	7.2	1244	2528	382	27.4	354.8	5.7	2009	–	–	1172	325	814
8743	"	18:00	19:38	~4.1	~4.0	5.2	5019	9149	1514	73.4	1436	17.5	6888	–	–	4799	1222	3024
8744	9/10/81	21.00	21.44	7.46	8.18	9.5	1953	4352	615	58.2	556.8	13.3	4165	–	–	2383	925	3909
8745	9/10/81	5.05	5.09	4.7	6.1	56.8	78	775	55	32	23	1.2	2718	–	–	132	226	114
8746	"	5 35	5 40	4.3	5.5	18.7	221	623	70.7	11.1	59.6	2.2	858	–	–	272	182	1415
8747	"	5.54	6.22	3.6	4.9	30.3	1038	7020	429	130	299	9.6	6227	4392	–	1393	946	1028
8748	"	6 31	7 46	2.9	4.0	6.7	3258	4918	980	66	923	12.9	5736	1148	–	3216	703	1762
8749	"																	

T1 LUMI	<L> ×10³⁰	SLat RUN	SLat	IBM/TAPE	BEAM PIPE (")	REJECT EVENT FR (%)	# BHABHA	# MULTI HAD.	BEAM ENERGY (GeV)
131	1.36	7.83	1.83	IBM		29.0	29	0	16.996
116	0.97	1.64	3.44	"		36.0	31	2	"
350	1.48	7.78	10.62	"	0·3	45.3	137	7	16.996
36	1.07	0.64	11.26	"	0.3	43.6	11	0	16.996
159	1.22	2.96	14.22	"	0·3	41.5	62	0	"
570	2.58	9.98	24.20	"	0.48	49.3	198	9	16.996
518	1.86	9.60	33.80	"	0.33	44.4	190	6	"
218	1.40	4.17	37.97	"	0.11	39.1	93	2	"
583	2.93	11.04	49.01	"	0.49	47.1	215	5	"
548	2.01	10.38	59.39	"	0.27	39.5	209	8	"
25	1.53	0.46	59.85	"	0.12	37.0	11	0	"
48	1.57	0.91	60.76	"	0.12	42.3	9	1	"
180	3.69	3.28	64.04	"	0.45	46.8	60	5	"
76	2.82	1.39	65.43	"	0.43	40.5	24	1	"
151	2.80	2.40	67.83	"	0.42	43.0	67	1	"
61	1.96	1.13	68.96	"	0.40	34.6	24	1	"
0	0	0	68.96	"	0.60	42.3	0	0	"
					0.60	42.8			
50	3.44	0.90	69.86	"	≈0.50	##	20	0	"
202	2.79	3.09	72.95	"	0.35	46.7	52	2	"
					0.30				
285	1.91	5.30	78.25	"	0.30	39.5	111	4	"
129	1.96	2.44	80.69	"	0.25	33.9	24	0	"
370	1.39	6.97	87.66	"	0.20	37.7	126	8	"
570	3.98	7.38	95.04	"	0.40	38.6	106	4	"
24	—	—	—		0.65				
114	—	—	—		0.65				
				IBM	0.60	41.3	20	0	"
87	0.84	0.87	95.91	"	0.30	40.9	50	2	"
709	0.50	1.83	97.74						
			139.6					68	

EXPT 19

Beam dumps

Lost Beams.

ZDAS went down. Standard hists. were saved.

JETC high current → trip ID.

Beams dumped.

Beams dumped

short test of ISI/TOF-µproc

beams lost

problems with LG, problems with TOF µproc

" " "

" " "

" " ← rubbish

" " ← rubbish

Test run - no events

Beam dumped

Beam lost $\frac{\Sigma}{\delta R} = 1809 \Rightarrow L = \frac{N_3}{15.5}\left[\frac{E_8}{15}\right]^2 \leq 150\,nb^{-1}$

High background

" " again optimization

Runsum had wrong constant. Multiply by 10/7

19.57 JDAS error 44 sub. 205 . Lead Glass. Kobayashi says it is OK.
20.29 Anode current alarm. Reset OK. Beams not lost.
21.20 JDAS error 44 sub 703 Task 1. —— ID Ring 3
21.24 JETC high current → trip
22:00 STANDARD-HISTOGRAM stops at HIST 49 with the error -3 !
22:10 Mark-J called us; They will dump the beam in 10 min. PLUTO has SOME problems and they want one beam for background measurement. PKR says it takes 30 min. to change the file and 20 min. for the measurement. Mark-J and TASSO agreed to give this time to PLUTO, so we also agreed.

8/10/81

0:00 Hedgecock & Kanzaki on shift
0:49 Now filling. Run 8722 Starts.
01 47 STANDARD HISTOGRAMS stops at HIST 42 with error -3? (MUON HIT-MAP)
04 46 Beams dumped.
05 29 New filling. Run 8725.
05 49 ID TRIPPED. anode current. Reset normally. } PKR carrying out background optimisation.
06 32 ID TRIPPED. anode current. RUN PAUSED.
06 42 Run 8725 continue.

Now fixed by Krelbiel (15:30 8/10/81)

NOTE:- FWD. MUON COUNTERS HV SUPPLY DOES NOT FUNCTION WITH H.V. SWITCH ON SYSTEM AND HAS TO BE SWITCHED ON & OFF MANUALLY. MONITOR AT TO OF THE RACK IS ON OVERRIDE AND SWITCH OFF CABLE UNPLUGGED.
↳ It had to be switched on always by a special procedure see note in the electronics room, rack 22

8:00 Warming & Nozaki I on shift
8:35 Tagging Power Supply -2 tripped off during the last 30 minutes
impact on data not too big: R. Eichler has reasonable argument, that it happened only during the last 5 minutes (average Σ was >0. still, tagging hits -2:73, +2:93, Mumu-histogr.)
8:51 beams lost
11:00 R 8729 started.
11:40 "IBM ONCINE JOB ERROR CHECK 2" messages appear several times (Bad Event structure) = Microprog. problem with LG, too many blocks firing, → NSO busy, high dead time
structure bad event structure (TOF) JDAS error 56
12:05 run 8731 stopped to start fresh histograms
Channel #53 of TOF is dead: no signal from PM
run # 8732 - 8734 error during parameter setting, runs stopped (µproc Start cable had to be disconnected)
BP-µproc disconnected

12:10 high frequency of JDAS errors 56, JDAS errors 44, 703 "NORD 50 busy" } ⇒ deadtime 99%
12:50 beams lost
Pluto asks for beam studies, because their background was too high to switch on the chamber

latch input TOF #53 taken from #11 since 53 is dead
#53 has got a sparking multiplier base
Mr. Schmidtmann switched off HV for channel # 24
Sparking TOF is also the reason for all LG firing

16:00 Pearce/Zhang on shift.
16:34 Inner detector trip – we only discovered this after some minutes of searching because someone had switched off the I.D. alarm in the counting room!!

18.00 Forward µ trigger decided and switched on from run 8743.
We ask for 2 µ-tracks Supertrigger4, as 1 Street is on almost all the time.
If rate should get too high at the beginning of next filling pull out the 4 counters close to beam pipe and leave the rest out.
by crane? (where are they?)
PM's for TOF counters 40 and 49 needs to be replaced next shutdown. Voltage at 3000V for ~~both~~ 40, 2700 now at 49 (40 increased by 30 V, 49 by 100 V.)
21:44 Petra lose half the beam. Beams dumped then for a refill.
23:45 still trying to refill PETRA.

0.00 FELST & BAMFORD on shift.
0:30 $\Sigma L_{tagging} = 95\ nb^{-1}$, $\Sigma L_{BRubbia} = 150\ nb^{-1}$ do we use wrong constants? *)
luminosity shown on the colour TV differs from those of the print out
Run 8744 TV shows $IL = 10.55\ nb^{-1}$, Run summary $7.38\ nb^{-1}$
*) $\Sigma L_{tagging} * \frac{\text{new constant}}{\text{old constant}} = 95 * \frac{10}{7} = 135.7\ nb^{-1}$ KW
Σ value on TV more correct.
Constant in TV program was changed according to pg 42, but was forgotten in runsummary program!
5.00 Show run # 8745
5.09 Stop run 8745 we are having problem with high background.
5:40 all experiments claim high background and ask for optimization again

6^00 trigger rate dominated by the forward muon counter
~~If~~ On page 49 one is advised to put the 4 closest to the beam pipe out
where are they? and which are the one closest to the beam pipe? A decent Cable
would be the minimum. Wouldn't it be better to leave them permanently out?
~~How can one~~ didn't take any action THE FOUR COUNTERS ARE NOW REMOVED FROM THE TRIGGER. (CABLES DISCONNECTED)

6^40 background optimization for PLUTO, they can't yet not switch on their forward detector
6^55 PLUTO seem to be happy
7^45 beam dumped for a new Refill

8:00 Hedgecock & Kawabata on shift
8:10 change lumi-constant in run summary program to make it compatible with TV-value.
The number suggested on pg. 42 ~~(200)~~ taken.
10:15 PLUTO will access between 10^30 and 14:30.

16:00 Glendinning / Wenninger
19:15 BEAM → We can not switch on since Forward Muon Counter not ON: Fixed by log 'NAR'...'ON'...Terminal
→ We can not switch on since "Pressure Tank" Alarm in ID Fixed with KAWABATA → was only spurious
→ We can not start run since error "56 TOF Etr Combo fault" stops run immediately.
→ We pushed on upper CAMAC crate blindly a few modules ← helped to start run
but error 56 comes from time to time while running. ← bad connection?
19:52 START REAL GOOD RUN 8751.
JDAS Error 44 : came up occasionally
21:00 ID failed due to 'Chamber Pressure' again → spurious? } Kawabata says reset → continued run.
NO ERROR 56 SINCE 1 hour !!! } in both cases the light was switched on in
21:10 ID failed due to "Chamber Pressure" again → spurious? } the "Rucksack" when it happened.
23:10 RUN 8751 STOP
Refilling Peha.

10/10/1981
0:00 Bethke, Heier on shift

0:10 Comparing int. luminos. for last Filling with other experiments:
JADE: 25.33 nb^-1, Tasso: 27 nb^-1, Mark J: 36 nb^-1, Pluto: —
1:10 new Filling ready

1:29 ID-Trip Anode-current, reset → o.k.
1:42 tried to look for histograms → message: "too quick, display busy...",
no possibility to start YSPY-sampling or to clear it.
stopped run 8753, reloaded N50 → all o.k., start run 8754
3:01 YSPY says 'BP TDC no hits' and 'Trigger 1 input missing'
for BP-counters 12.....23. But histograms 2 and 13 look
normal (no holes etc.)
3:43 Same YSPY messages comes ~ all 15 min. Hist T1 input: ch.# 13...24 seem to
be low. Clear hist → ~~no~~ new hits for 13...24! Also in Hist BP-Hit-Map.
Found the reason: Crate 3 / Branch 3 no power output. Switched off and on → o.k.,
also histograms.

4:45 Error 56 sub error 405 appeared again (like Wenninger described).
Pushed Camac-crate → o.k. Started new run 8757
6:50 MU-Crate 3 missing, reset → o.k.
7:13 Run 8760 with BP + TOF µProc on! → Number of
'Bad Event Structures' increases

8:00 Bamford and Odaka on shift.

8:47 new filling ready.
8:55 RUN 8762 started! "MUON crate missing" crate 12. → reset.
9:01 LG thresholds adjusted. background level = 50 mV.
10:10 ID-trip anode current. → reset.
10:15 ID lamp again Anode comes - reset. Phone PKR to see if they are doing anything with beam, they aren't.
10:25 ID-HV down with no alarm. The 'tank pressure' lamp on alarm detector was on. → reset.
12:10 'MUON CRATE MISSING' CRATE 12, just after a run started.
12:17 beam dumped.
:46 new fill.
12:55 Stop run 8765 too soon (before 10 min up) stop J5 and start run 8766
13:20 Halfway through run 8766 we notice there is no MIPROC rejection - somehow we
have switched J5 off, it may have been the confusion at the start of the run? Try
in vain to get through to R. Eichler, eventually phone Bonte who tells us how
we should switch on again. Run 8767 is a short run we had to stop
& switch on the MIPROC.
13:45 Start run 8768 with MIPROC ON.
15:45 beam dumped.

RUN	DATE	START	STOP	I^+	I^-	DEAD TIME %	TIME (SECS)	RECORDS OUT	ALL TRIGGERS $\times 10^6$	T0 REJECT $\times 10^6$	T0 ACCEPT $\times 10^6$	T1 ACCEPT + POSITIVE $\times 10^6$	T2 ACCEPT	T3 ACCEPT	T1 STOF STR	T2 COLLIN	T2 ≥2 TOF LG >1 ≥2 TR.	T1 LG > 4
8751	9/10/81	19.52	21.35	48	48	7.5	4122	8002	1507	113	1394	20.9	8658	389	—	5196	2175	3648
8752	"	21.35	23.11	40	40	4.6	4982	6193	1489	68.8	1420	14.3	6419	232	—	4563	1219	2994
8753	10/10/81	1.10	1.47	6.5	7.3	8.6	1682	3128	517.7	44.5	473.2	10.5	3594	186	—	2048	843	1304
8754	"	1.49	3.28	5.1	5.7	6.5	5079	8002	1546	100.4	1446	23.9	8457	433	—	5519	1626	3597
8755	"	3.36	4.01	4.7	5.3	5.4	1326	1759	396.9	21.5	375.4	5.0	1948	72	—	1359	369	831
8756	"	4.34	4.39	7.4	8.4	13.9	237	650	79.7	11.1	68.6	2.5	868	43	—	399	192	235
8757	"	4.52	5.58	5.8	6.6	12.3	3196	8002	1033	127.5	906.2	34.8	9931	572	—	5090	2365	3334
8758	"	5.59	6.41	5.1	5.9	9.3	2084	4016	647.4	60.1	587.3	17.1	4750	274	—	2855	962	1707
8759	"	6.42	6.58	4.9	5.7	8.3	~~3845~~	1445	260.2	20.7	229.5	5.8	1629	103	—	1036	293	612
8760	"	7.07	7.14	4.7	5.4	8.9	456	834	144.8	12.9	131.8	3.1	956	55	—	609	182	337
8761	"	7.14	7.52	4.3	5.0	6.5	1922	2977	589.7	40.8	548.9	11.5	3492	169	—	2353	611	1218
8762	10/10/81	8.55	10.22	6.4	6.4	10.0	3959	8000	1247.4	124.2	1123.2	29.5	9345	474	—	5233	2288	3397
8763	"	10.22	12.09	5.0	5.1	6.9	5189	8002	1579.6	109.4	1470.1	28.2	9381	439	—	5992	2039	3400
8764	"	12.09	12.16	5.0	5.0	5.7	334	438	103.5	5.92	97.6	1.60	533	26	—	354	110	174
8765																		
8766	10/10/81	12.57	13.38	7.1	7.5	15.6%	1866	8002	632	98.4	533.8	16.2	5385	286	—	2088	1480	1807
8767	"	13.40	13.45	7.0	7.4	10%	224	826	70.3	7.0	63.3	1.7	548	20	—	241	152	187
8768	"	13.45	15.12	5.6	6.0	8.5	4374	8002	1347.2	114.9	1232.3	27.8	9750	462	—	5683	2318	3317
8769	"	15.13	15.46	5.2	5.5	6.9	1720	2715	518.1	35.6	482.5	8.94	3112	145	—	1982	628	1177
8770	"	16.13	17.10	7.8	8.2	11.3	2756	6074	892	100.9	791	24.9	7567	412	—	3925	1819	2463
8771	"	17.26	19.00	6.5	6.8	8.0	4667	8002	1457	116.8	1340	30.0	9412	429	—	5762	2098	3438
8772	"	19.00	19.22	5.2	5.4	6.6	1126	1632	340	22.3	318	5.6	1905	89	—	1180	418	708
8773	"	19.47	20.05	8.0	7.6	18.9	393	1735	134.8	25,5	109,3	4,75	1755	87	—	374	624	443
8774	"	20.13	20.30	7,2	6.8	9.5	810	7504	248	23,7	224	~~6.49~~ 6.49	1897	87	—	7081	528	≥ 3923?
8775	"	23.04	23.45	8.4	8.3	10.1	1893	3915	597.9	60.3	537	12.7	4939	177	—	2436	1354	1580
8776	11/10/81	0.26	1.53	6.3	6.5	7.7	4466	8002	1360	104.5	1256	24.2	8807	407	—	5327	2146	3330
8777		1.54	3.26	5.1	5.2	6.0	4680	6571	1408	48.2	1324	18.0	6893	287	—	4908	1166	2825
8778	"	5.30	6.36	6.4	6.7	8.5	4140	8002	1284	108.8	1175.4	24	8997	416	—	5239	2071	3328
8779	"	6.56	8.41	5.0	5.3	5.9	5309	7521	1596	94.8	1501	20.4	7930	370	—	5353	1579	3195
8780	"	09.44	11.18	5.8	5.9	7.4	4631	8002	1419	105.3	1313.6	24.2	8777	440		5374	2054	3324
8781	"	11.18	12.49	1.2	1.1	5.3	~~4776~~	6402	1416	75.6	1340	17.1	7190	267		4690	1315	2758
8782	"	14.59	16.29	6.1	6.3	8.0	4535	8002	1396	111.1	1285	25.5	8797	369	—	5147	2009	3323
8783	"	16.34	17.54	4.9	5.1	6.0	4463	6437	1251	74.5	1176	16.2	6219	508	—	2753	1014	2629
8785	"	19.29	19.54	7.4	6.5	18.4	826	2347	~~594~~	54.1	239	5.7	4320	248	—	923	1212	690
8786	"	19.54	20.28	6.9	6.0	7.2	1673	2972	514	37.2	477	8.5	3095	311	—	1903	754	1183
8788	"	20.31																

Junk

T1 LUMI	$\langle L \rangle \times 10^{30}$	$\int L dt$ RUN	$\int L dt$	IBM / TAPE	BEAM PIPE (V)	REJECT EVENT FRACTION (%)	# BHABHA	# MULTI HADRON	BEAM ENERGY (GEV)	COMMENTS
560	3.07	15.10	154,70	IBM	0.35	41.0	236	6	16.996	ID tripped twice during this run $\int Ldt$=15.10 is it correct?
374	2.05	10.23	164,93	"	0.13	39.2	137	4	16.996	RUN STOP
269	4.37	7.35	172,28	IBM	0.50	43.2	101	3	16.996	
582	3.11	15.81	188.09	"	0.48	39.8	233	10	"	
113	2.38	3.15	191.24	"	0.30	41.8	47	0	"	beams dumped
54	5.98	1.42	192.66	"	0.7	47.2	23	0	"	Run stop due to error 56
599	5.06	16.17	208.83	"	0.75	45.6	230	8	"	
269	3.72	7.75	216.58	"	0.50	43.7	110	2	"	
94	3.15	2.53	219.11	"	0.45	42.0	39	1	"	
50	2.96	1.35	220.46	"	.40	42.0	~~40~~ 19	1	"	
169	2.67	5.13	225.59	"	.40	42.3	~~188~~ 78	1	"	
602	4.14	16.40	276.99	IBM	0.65	43.5	232	7	16.996	
462	2.47	12.82	289.81	"	0.40	43.0	175	11	"	
23	1.88	0.63	290.44	"	0.35	43.6	8	0	"	beam dumped
										No events have run summary.
335	4.79	8.94	299.38	"	0.65	0	121	5	16.996	MIPROC switched off sometime.
34	4.08	0.91	300.29	"	0.50	0	10	0	"	Stopped to switch MIPROC ON.
513	3.20	14.02	314.31	"	0.50	44.5	225	10	"	
155	2.48	4.26	318.57	"	0.40	42.3	57	3	"	beam dumped.
438	4.28	11.78	330.35	"	.80	45.8	169	4	"	
501	2.94	13.72	344.07	"	.61	43.4	195	5	"	
86	2.12	2.39	346.46	"	.45	42.9	36	2	"	
σ see Mc	—	~440	—	"	.75	~~47.8~~ 45.7	27	0	"	Tagg & Lum. HV on - Z-side was off.
—	—	—	—	—		45.1	50	7	"	
353	5.02	9.5	355.56	"	.70	~~46.1~~ 46	~~416~~ 4	4	"	Beam lost
765	4.66	20.83	376.79	"	.60	41	319	12	"	
617	3.61	16.89	393.68	"	.55	39	281	6	"	beam dumped
669	9.42	18.30	411.59	"	0,70	42,4	227	10	"	
668	3.46	18.37	429.96	"	0.46	39.7	254	4	"	new filling 8:42→
720	4.22	19.53	449.49	"	0.6	41.2	293	6	"	
543	3.14	14.86	464.35	"	0.4	39.2	199	8	"	beams lost
832	4.95	22.46	486.81	"	0.6	41.6	320	10	"	
719	4.73	19.68	506.49	"	0.4	37.6	297	8	"	beam dumped
176	5.52	4.56	511.05	"	0.6	58.3	53	1	"	BP+TOF MIPROC on
296	4.82	8.07	519.12	"	0.55	40.5	118	2	"	BP+TOF MIPROC off on
								229		

2928

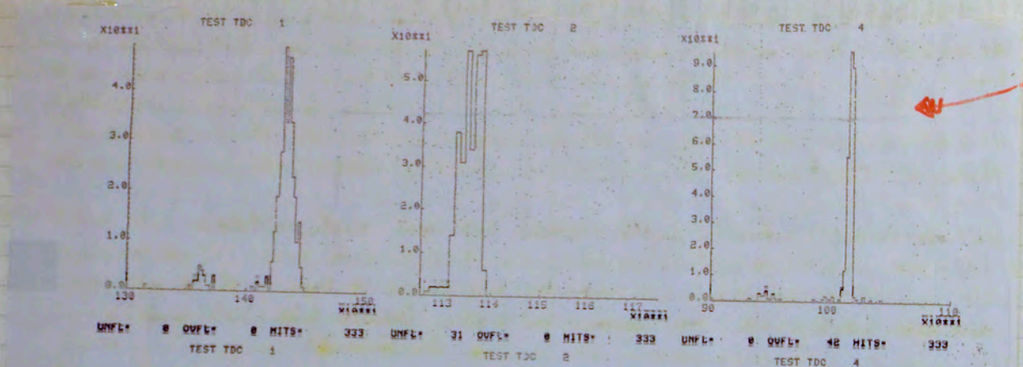
10.10.81 H. Krehbiel + A. Wagner

16^{h13} beams again.

16.42 JDAS error 44/703 1x, Also "Bad event structure on Calotw.

16.56 " " 51/00 (False Interrupt from a DL9).

From 17 h. Very funny things in YHMon Histog. All have jumped about 20 ch. (7 nsec.) Check what I can check. I had caught them in a period of instability. as ken They seem to have settled at new values



See also Histogr. Sheet from 17.05 10/10, Run 8770.

I decided to sacrifice Kado's Temperature-dependency-Measurement and installed a Test Setup with scope, where Bund discr. Output (delayed) and Start TDC are superimposed. See in Electronics Room. Watch it!
I suspect it may be the Crate Supply DC voltages.

19^{22} background optimization for Pluto

19^{22} beams dumped

19^{42} beams again

20.00. TV Screen shows Lumi Zero. Run-so-far: No Lumi Events. Go to other side of detector. LeCroy HV seems down on Z neg Side. We take data nevertheless (rely on Bhabha Lumi.) Wagner calls Hughes. Promises to come. Meanwhile Wagner tries ~~acto~~ Narosha's programs. Run effected: 8773, 8774, We decided to continue data taking while tracing Lumi problem.

20.26 All Beams lost. Correction coil had broken down

21.39 Still no beam. PKR can't inject and doesn't know why.
G. Hughes has in the meantime replaced one HV power supply (Plug in) of -z tagging system.

23:00 beams again

23.17. There was a jump apparent on the YHMON Histograms. Also in the T of Tot TDC. Maybe it's the Logics. (Propagation of Beam Pickup through Gates.) But I have not the slightest Idea what may cause such sudden jumps (in contrast to slow drifts.) Some "Wackelkontakt"?

23.36 Greatest discovery in JADE; The delay of TOC start may be influenced by tapping at the * Fan-Out! T is now back to 1.4 nsec. This supports the Wackelkontakt Theory. Decide not to take any action now, but to postpone it to the next short break of some hours.

23.41 beams lost , T has gone to 1.2 nsec. If it leaves that value, tapp the fanout again.

11.10.81

0.00 Zhang + Heintzelmann

1.30 μ-crate missing faulty port 8 comes and goes with ~ 1Hz

~ 6.00 YSPY: TOF TDC 40 missing. In MEAN TDC and HITMAP histograms also missing. check signals with Scope → ok. Now histograms start to fill up. (Wackelkontakt?) (or too rare?)

08:00 Ball, Yamada on shift.

08:41 Beams dumped. Run 8779 ended.

09:30 New fill ready. BP >3 → optimising by PKR.

09:45 Optimisation ended, but we still see BP ~2V (ie. about a factor 3 higher than 'normal' at beginning of fill). PKR say their ~~#~~ instruments indicate normal background. We find we ran switch on ID. — the current looks OK. DT ~10%. mipmon ~ ~44%. triggers OK. so carry on. Run 8780. Eventually found to be due to BP counter #16. Don't see why PKR saw normal reading. #16 removed, BP ~ 0.6V

10:33 ID. HV tripp.

11:20 Run 8780 ended. Start 8781

12:32 Re-fill suggested for 12.45. We agree. — however, problem with PIA, so re-fill delayed.

12:45 Beam lost. ID runs down without NOT-ans. Stop run 8781
RF transmitter failure.

14:50 New fill ready. Initially couldn't switch on ID. Tank pressure. Checked pressure — looks OK compared to values in tank log-book. Reset alarm. ID on. Start run 8782. BP counter #16 reconnected to meter.

15:45 JDAS ERROR 000044 (OCT) SUBERROR 000703

16:00 I have cured the noisy street (#18) in the T3 trigger. Was (wierd!) fault in μ fast pulse board in crate 3. The fast μ cntr. trigger rate is down by at least factor 5 now. To account for current 'dead' chambers in the endwalls, which might lead to inefficiency in the T3 trigger, I have permanently enabled the following street-groups:
26·5, 27·5, 28·5, 31·5, 32·5, 33·5, 34·4, 35·5, 36·5.
We should now be able to run with a requirement of only 1 street fired (i.e. 1 μ track) rather than 2 as at present. Will try a test run soon.
— CHANGED STREET MULTIPLICITY REQUIREMENT TO 1 for start of run 8783. T3 rej/(except + rej) ~95% i.e. OK. Caused intermittent missing responses from μ-crate 8, I hope. Bad reset pulse.
To change T3 street mult. back to 2, find top rotary switch in rack 17, top crate, right hand side. Move 1 click clockwise.

16:00 Kobayashi + Eichler on shift
17:20 Tomorrow will be access from 9-11 h for Pluto, Tasso, Mark-J
18:00 beams dumped for refill.

Since this running period (exper. 19) occasionally the message "bad event structure" appeared on TV and in RUNSH "event clobbered". This was traced down to ~~bad~~ bad muon bank. It is not a Camac readout error and therefore the error message is misleading. I changed therefore the error message to "Muon bank structure error" which will appear ~~from now on~~ only in the runsummary. Any message "event clobbered" should be taken very seriously and you should call a computer expert. Examples of a bad muon bank can be obtained from R. Eichler.

19:25 beams ready. Start run with BP+TOF Mupac on
19:54 stop run, since still some error in TOF Mupac – Nord10 communication
20:45 beams dumped for refill
22:10 beams ready. start run with BP+TOF Mupac on
22:20 YSPY detects error BP-counter 12-24 off (no hits). Suspect mupac, but finally find, that NIM-Crate with discriminators was off. Switch crate power off/on → works again.
Frequent time outs 703 → 708 problem! Goes away by itself
23:06 Beam lost.
23:26 short break. lower magnet to 4000 A

23.17. This times there was a jump in Test Histogr. 3 alone. What the hell is on it? After careful to pursuit of all runs I think it might be KADO-s pickup. Jump about 1 mrad.

12.10.81
0:00 Elsen & Kawabata on shift
0:20 PETRA announces refilling magnet back to 7.5 kA.
2:00 Still problems with injection. PKR people do not understand why they cannot get any current into the machine. They want us to leave the magnets on.
6:00 Still no beams. PKR people have called an expert in the meantime.

† Since there is no jump elsewhere, especially not in the Prepulse-Sync-Histogram, the jump might come from a ~~dator~~ "Wachslichtorakel" in a Delay-Box.

8:00 Krehbiel on shift. Wagner → ~~no~~ No show. → Show
8.15. Still no beam. Called Mark J (coord.). They say: access not earlier than nine, even with no beams. They want to investigate their trouble.

9:15 message from PKR restart 17:00 the earliest, Synchrotron is down
16:00 Glendinning & Kanzaki on shift.
17:10 Tag HV Version 09 installed.
During day: Start-TOC-Fanout for upper Camac-Crate (i.e. Beam Pipe and Test) Taken out. There was no obvious result in it, all internal signals looked ok. Some IC cooling fins were lose, lovely-lying around on the PC board. Possibly ~~those were~~ then one of them made accidental short circuits somewhere. Second possibility: The input cable to A had no good ground (shield) connection. This may have distorted pulse shapes. I took a few ~~precaut~~ precautions: All cooling fins glued with araldite. Replaced IC 70790 by another one. Set input thresh. from 0.389 to 0.338. Why won't we Pow neg? I do not know. (
18:30 Injection – Magnet up to 7500 A.
23:55 beams ready

13/10/81 0:00 Nozaki & Warming
0:01 no triggers, no signal on beam scope, "traffic light" is red inspite of 2× 6mA in the machine, we phone Krehbiel. He gives us instructions, how to trace down the problem.
0:25 LG-thresholds set to "45 mV" settings.
0:40 next problem: YSPY detected missing BP counter 12-24, NIM crate was off, switching off and on makes it work again. Alas! We got it! We found a wrong cable connection!
1:05 found BP-NIM-crate off again
1:20 " " " "
1:25 " " " " This lousy crate gets on my nerves!
1:29 " " " " " " " " " "
1:33 beams dumped
e^+e^- currents are not updated on the colour TV! ←

RUN	DATE	START	STOP	I^+	I^-	DEAD TIME (%)	TIME (SECS)	RECORDS OUT	ALL TRIGGERS $\times 10^6$	TΦ REJECT $\times 10^6$	TΦ ACCEPT $\times 10^6$	T1 ACCEPT +POSTPULSE $\times 10^6$	T2 ACCEPT	T3 ACCEP	T2 3TOF 3TR.	T2 COLLIN.	T2 ≥2TOF LG>1 ≥2TR.	T1 LG>4
8789	11/10/81	20:32	20:44	6.6	5.7	6.8	585	992	184	135	171	2.8	1012	99	-	222	56	402
8790	11/10/81	20:47	21:46	5.8	4.9	6.3	3024	4572	922	585	864	12.0	4574	447	-	1138	312	1822
8791	"	22:13	22:21	7.5	7.7	14.0	358	1031	120	16.9	104	3.2	1048	129	-	191	71	367
8792	"	22:22	23:07	6.6	6.8	11.2	2181	4843	686	77	608	16.9	5040	699	-	966	373	1793
8794	13/10/81	0:24	1:32	~6	~6	7.1	3850	5105	1018	72	946	15.1	5536	587	-	3722	1352	1897
8795	"	1:58	3:18	~8.5	~8.7	10.6	3704	8002	1175	124	1051	26.6	9080	944	-	5027	2152	2925
8796	"	3:11	5:02	6.4	6.7	7.6	5126	8002	1565	119	1446	24.4	8671	802	-	5679	1725	3053
8797	"	5:02	5:37	5.3	5.3	6.9	1766	2369	535	37	498	6.3	2551	200	-	1771	492	921
8798	"	6:11	7:31	7.7	7.6	10.8	3923	8002	1236	133	1103	25.0	10235	979	-	4819	2476	2926
8799		7:33	7:45	6.3	6.3	8.4	605	1025	186	16	170	2.99	1117	99	—	243	80	395
8800	"	7:47	7:50	6.1	6.1	7.4	74	170	23	1.7	21	0.3	143	17	—	41	12	54
8801	"	7:51	8:57	5.4	5.4	8.3	2814	4177	879	73	805	12.0	4845	386	—	3141	983	1815
8802	"	8:53	9:12	5.2	5.2	5.7	1010	1324	305	17	287	3.7	1452	114	—	1002	281	641
8803	"	12:12	13:30	6.3	7.0	10.1	3871	8002	1209	122	1086	24.8	9116	958	—	4618	2723	2942
8804	"	13:31	14:00	5.5	6.2	8.8	1338	2218	411	33	378	8.2	2580	297	—	1609	503	703
8805	"	14:02	14:32	1.4	1.4	6.8	1491	2274	456	31	425	7.3	2554	281	—	1682	512	780
8806																		
8807	13/10/81 - 14/10/81	23:08	00:43	5.5	5.7	5.4	4844	8002	1473	105	1368	24.8	8418	903		5418	1811	3097
8808	14/10/81	00:43	01:32	5.0	5.2	4.2	2518	3324	757	41.3	715	9.84	3647	314		2573	695	1232
8809	"	05:16	07:03	5.3	6.2	5.4	5484	8002	1673	115	1559	24.8	8863	805		5792	1876	3078
8810	only pedestals, beams lost																	
8811	14.10.81	11:30	13:01	5.6	6.8	8.8	4380	8002	1363	120	1243	23.5	8371	827		5089	1986	3025
8812	14.10.81	13.02	14.12	4.7	5.8	6.0	3615	5034	1092	65	1026	14.4	5263	403		3696	1019	1968
8813	"	14:26	15:01	4.3	5.3	5.8	1827	2200	546.6	31.4	515	5.7	2414	162		1691	479	867
8814	"	17.45	18.51	6.8	7.7	13.1	3166	8002	1016	1335	883	26.9	9822	982		4512	2364	3005
8815	"	18.51	20.15	5.6	6.3	9.3	4452	8002	1299	120.9	1178	28.0	8101	960		5211	1890	3097
8816	"	20.16	21.03	5.0	5.7	8.2	2391	3572	740	60.8	679	11.9	4108	375		2692	706	1338
8817	"	21.26	22.39	7.1	7.4	10.9	3581	8002	1129	122.9	1007	25.6	8811	986		4556	2148	3080
8818	"	22.39	22.49	6.9	7.2	8.8	445	923	142	12.6	130	2.7	931	96		552	239	368
8819	"	22.49	23.16	6.5	6.8	8.3	1325	2430	415	34.4	381	7.6	2592	264		1602	611	937
8820	24/25 10/81	23:18	1:02	5.2	5.4	6.5	5259	7593	1595	103.2	1491	22.4	8213	691		5595	1706	2971
8821																		
8821	15/10/81	10.55	11.59	6.7	6.9	12.9	3077	8002	992	128	863	23.1	9244	1623	—	4004	2691	2658
8822	"	11.59	14.03	5.1	5.2	7.4	5081	8002	1596	116	1452	24.4	8980	816	—	5438	2121	3041

T1 LUMI	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ RUN	$\int L dt$ 5.11.12	IBM/TAPE	BEAM PIPE (V)	REJECT EVENT FRACTION (%)	# BHABHA	# MULTI HADRON	BEAM ENERGY (GEV)	
88	4.13	2.42	521.54	IBM	0.6	39.9	33	3	16.996	BP + TOF μproc off
404	3.68	11.13	532.67	"	0.6	38.8%	10	1	"	— " — on Error in N50 progr.
73	5.53	1.98	533.65	"	0.5	38.9	36	0	"	— " — on. died during run
433	5.47	11.92	545.57	"	0.6	40.9	150	2	"	— " — on. Beam lost
307	2.44	8.17	553.74	"	0.22-45	42.8	108	3	"	beams dumped
604	4.29	15.90	563.64	"	0.65	42.6	232	7	"	~~BP TOF μproc switched on during run~~ BP,TOF μproc off
695	3.60	18.46	588.10	"	0.5	40.8	245	6	"	- " -
183	2.77	4.88	592.98	"	0.4	40.0	77	3	"	beams dumped - " -
563	3.67	14.39	607.37	"	0.6	46.8	216	10	"	$\mathcal{L}_{Bha} = 17.6$ - " -
76	3.35	2.02	609.59	"	0.45	41.2	30	0	"	. BP+TOF μproc on
11	2.65	0.2	609.79	"	0.40	17.9	4	0	"	"
271	2.57	7.22	618.01	"	0.40	42.6	96	3	"	off
79	2.04	2.07	620.08	"	1.35	40.8	32	2	"	beams dumped
616	4.18	16.17	636.25	"	0.6	42.7	213	7	"	$\mathcal{L}_{Bhabha} = 17.6$
183	3.65	4.88	641.13	"	0.5	42.5	64	4	"	
173	3.10	4.62	645.75	"	0.45	41.2	62	1	"	beams dumped
					0.4					Due to no fast clear to end glass this run is all rubbish!
682	3.75	18.15	663.90	"	0.4	40.2	250	12	16.985	" R=5.8
248	2.65	6.66	670.51		0.35	40.5	105	4	16.987	Beams dumped
532	2.58	14.17	684.73		0.35	41.2	208	4	"	
386	4.80	21.00	705.73	"	0.57	40.2	301	20	"	ACC079 on
447	3.32	11.98	717.71	"	0.40	~~39.1~~	~~172~~	~~3~~	"	-"-
161	2.34	4.28	721.99	FH 132	0.27	38.2	66	2	"	Beam dumped
608	4.97	15.72	737.71	IBM	0.80	45.7	235	13	"	
574	3.65	15.15	752.86	IBM	0.55	42.3	216	7	"	
261	2.89	6.90	759.70	IBM	0.4	42.3	101	3	"	
696	5.13	18.37	778.07	IBM	0.7	42.4	167	6	"	
66	3.99	1.78	779.85	"	0.5	38.3	0	0	"	stopped to try to cure 'SETCH high cur' permanent message.
183	3.69	4.89	784.74	"	0.45					NORD-50 problem
576	2.95	15.49	800.23	"	0.42	~~40.4~~	247	7	"	bhabhas + multi-hadrons not counted. Beams dumped TOF 85 1325
					0.34					
564	4.78	14.70	814.93	"	0.85	44.6	199	4	"	
591	3.09	15.69	830.62	"	0.5	42.0	244	7	"	

TOF 85 13.24

13/10/81

1:57 new fill ready
2:20 found BP-NIM crate down again
2:40 JDAS error 44 suberror 703
3:28 we tried to switch on BP + TOF μproc during run, got immediately JDAS error 44 suberror 203 every few [illegible]
3:29 we switched off μproc's again
3:38 JDAS error 56 suberror 405
3:42 found BP-NIM-crate down again
3:50 JDAS error 44 suberror 703 (twice)
5:15 BP-NIM-crate found down again
5:24 JDAS error 44 suberror 703
5:37 JDAS error 56 suberror 405
5:49 BP-NIM-crate found down again
7:15 R. Eichler comes in and fixes the PETRA-Update (some flag was wrong)
8:00 Heinzelmann, Heier
8:05 JDAS error 44 (branch 7, crate 7)
8:47 " " " " 2, " 5)
9:00 histogram display causes message: 'too quick, display busy....', no possibility to display any histogram —> stopped Run 8801 —> reloaded N50 program —> started Run 8802

12.40 Connected additional T_0 into TOF-TDC 85. Value is 1324.
Please read value from time to time and write it in Log-book.

Do LIST 34,
Then look in
TOF bank for marked
Number
(line 10, number 6)
1 channel = 50 psec

this doesn't apply if the AC2099 is running.

TOF CNTRS	BANK		32767	8	0
155	119	113	198	106	113
35	25	18	46	41	0
25	68	87	21	65	26
39	30	44	48	0	29
19	58	38	62	89	88
4075	878	887	899	808	951
749	2324	2324	2324	908	923
2055	2055	2055	2055	0	78[illegible]
860	2118	0	2077	2077	207[illegible]
0	882	897	854	744	13[illegible]
34	46	39	55	48	[illegible]
56	72	69	79	0	[illegible]
4088	4088	4088	4088	4088	40[illegible]
4094	4094	4094	4094	0	20[illegible]

TEST ADCS	BANK		32767	6	
4	8	1	3	5	
2081	0	2069	2069	145	206

ENTER "E" TO END - ANYTHING ELSE TO

12:50 Compare TASSO and JADE Lumis:

	TASSO	JADE	"JADE Bhablas"
gated	4.5	3.5	3.86
ungated	5.6	3.9	4.30

13:43 Run 8804, T_0 value in TOF-Bank is 1326
14:00 Run 8804 stopped due to IBM transfer problems
14:22 Prepuls 20 ns 'weggerutscht' (PKR), corrected by PKR
15:00 PLUTO wants ~15 min access | 16^{00} Darvill & Kobayashi on shift.
16:00 Until monday machine phys. will try to optimize luminosity after each fill, Koch says.

16^{27} $\int L dt$ (Bhablas) = 529.7 nb^{-1} Runs 8752 to 8805 (excluding Run # 8790)
" (Lumi, tagging) = 479.92 nb^{-1} " " (" " " ")
Ratio = 0.906.

19:08 Still no beam on this shift. P.K.R. say they do not know what is wrong. They have been trying to fill for the last 2½ hours but cannot establish stable beams even at 7 GeV.
22:04 Run 8806 started
22:05 I.D. trip
22:20 Run stopped
22:30 Run 8807 started - Data not written
22:32 Run stopped
23:08 Run 8807
23:52 T_0 value in TOF-bank is 1326

(22:05–22:32) All sorts of problems first we find TA input missing due to crate power supply trips, then lead glass data all becomes jammed due to fast clear being absent - call for help and Beate Naroska comes and touches all the cables on the trigger box - it all works now, so we start run 8807 and write to IBM!

24^{00} Marshall & Olsson on shift

01^{14} Mach J want to fill in 20 mins, I would go on longer with this fill but they are confident that the fill will be quick. We shall see.
01^{32} 8808 ended for refill
Thoughts on luminosity. Up to end of Run 8807, there were 292 hadron events (excl R 8790) from which one can calculate that a luminosity of at least 973 nb^{-1} would be required compared to $\int L = 652.77$
Since $652.77 \times \frac{10}{7} = 933\ nb^{-1}$, is it possible that after bottom of page 47 when L_{TV} became = Lumunny [illegible] that mod $L_{TV} \to L_{TV} \times \frac{7}{10}$ was made instead of $L_{sum} \to L_{sum} \times \frac{10}{7}$?
Otherwise there is much junk in hadron events
Up to end of run 8807, the lumi from Bhablas is 704.1 nb^{-1}. 652.8/704.1 = .927. Hadron events probably too high.

14.10.81

05[15] The 'quick' fill requested by Mark J is now ready. We waited 3 3/4 hours for it.
07[01] Run 8809 ends and beams lost 30 seconds later. "Sender Ausfall"
08[00] Zhang and v. Krogh on shift.

(LC) Resumed only where it left off. Mark J (Fritz Schultz) daily courier of that element rarely 4 left hours of precious night shift.

Integrated luminosity for this running period: JADE (Bhabha's) 704 nb^{-1}
TASSO 863 nb^{-1}

11[30] run 8811 started
14[12] IBM error 54, also error 53
14[25] started to write on tape even though IBM is supposed to be fixed soon
14[28] IBM called. The disk is down, fixing will take at least half an hour.
14[30] Mark J wants to refill in half an hour. Now lumi is $L = 2.2 \times 10^{30}$
15[01] stopped run and filling
15[28] IBM up again

Starting with run 8811 the TOF+BP Hiproc AC2099 is in action. New format!

16:00 Ball, Takeda on shift.
17:40 New fill ready. BP high ~0.8, but the currents are also higher than usual (8.9, 8.1 mA)
Try to switch on. Green lamp in master control switch doesn't flash. ID won't turn on.
ID had tank pressure 'slow-and'. Check pressure (9836) and reset. Bulb in green ~~lamp~~
switch must have failed, since ID now comes on OK. Start run 8814.
18:51 End run ~~8815~~ 8814. 3 IBM online job error check 2 during this run. Notice run summ. gives
3 'event structure clobbered'. B. Naroska says due to AC 2099 + is contacting Ralph Eichler.
20:00 The DVM of lead glass HV was broken.
Another DVM, which has been used to check the LG energy threshold, is used
for LG-HV for the time being. The broken DVM will be sent to EPOS.
20:15 End of run 8815.
20:20 Mark J request new filling at ~~20 40~~. We have $L = 2.6 \times 10^{30}$. The last filling took >2 hours.
I suggest waiting 1 more hour. Eventually all exps agree to refill at 21:00.

21:05 Beams dumped. Run 8816 ended.
21:28 New fill ready. Start run 8817.
22:41 End of run 8817.
22:45 LG threshold ~45 mV adjusted
'Fehlermeldung high current' faulty part 94, 95 or 96 ~~of~~ always present. See nothing unusual

on 'scope, anode current histogram, bitmap etc. Phone Heuer. He suspects software problem.
Stop run 8818, start run 8819 to try to clear. Message re-appears immediately new run gets going. Ring Heuer again. No point in his coming in, since he can't do any further checks. Perhaps we should reload TOFS and, if necessary the NORD? when time permits.
23:13 Notice we are getting no Bhabha events. As both Muroya + Takeda are here, this results in an immediate and impressive whirlwind of activity!!
Once again, suspected software problem. N50 L.G. histograms don't agree with what is observed elsewhere. Re-load TOFS. Problems all cured. Start run 8820

15/10/81.

0:00 Parvill & Kanzaki on shift.
1:02 Beams dumped
1:07 Run 8821; Junk! — No, it's o.k., data will written
02:15 Still no beams — PKR now say they have a problem — "Separatplatten defekt"
02:35 we call PKR and they say they are working on the problem but cannot at the moment estimate when we will get beam again.
02:49 From Schultz from Mark-J calls with the latest information. A resistor has burnt out and there is no spare, but one of the shift crew is an expert on this section and it is thought that he will be able to make a temporary repair. Still no estimate of time needed for this repair, but we remain optimistic.
03:15 The T.V. screen now predicts restart at 05:30 — we shall see!
We decide to reduce the magnet current somewhat to save electricity - we choose to lower it to 4000 A.
05:35 we see the message has changed: "Restart about 6.00".
06:11 The time for restart has now become 06:30
06:31 another ½ hour update in the starting time!
06:49 'Achtung! Potsa wird eingeschaltet' - we bring the magnet current back up to 7500 A
06:57 magnet now at 7500 A
07:20 magnet fluctuation message - we look at the DVM and see that it is swinging between 7450 - 7500 with occasional excursions to 7460
we watch it for a few minutes and it stabilises at 7498 so we bring it back to 7500.
07:27 first signs of injection.
07:49 "Kurze Unterbrechung" - HF problems now.
08:00 Glendinning + Naroska on shift.
09:50 Injection starts. Magnet up to 7500A.
10:54 Beam at last, Run 8821 started.
11.15 Beams not too good, try bumps (horizontal, symm. and wiRangle) only slight improvement. Instantaneous deadtime now below 10%. So we leave it.

RUN	DATE	START	STOP	I⁺	I⁻	DEAD TIME (%)	TIME (SECS)	RECORDS OUT	ALL TRIGGERS x10³	TØ REJECTS x10³	TØ ACCEPT x10⁶	T1 ACCEPT +POSTPEAK x10⁶	T2 ACCEPT	T3 ACCEPT	T2 3TOF 3TR.	T2 COLLIN	T2 ≥2TOF LG>1 ≥2TR.	T1 LG>4
8823	15/10/81	14:03	14:47	4.7	4.8	5.6	2271	2931	676	38	637	8.5	3333	295	—	2247	673	1126
8824	"	16:06	17:18	6.4	7.5	14.0%	3282	8002	1068	149	919	27.6	8963	1140	—	4507	2372	2928
8825	"	17:15!!	18:12	2.2	2.4	9.5%	2722	5086	845	80	765	17.6	5431	626	-	3362	1260	1970
8826	"	18:50	20:04	7.0	7.4	10.9	3553	8002	1123	122	1001	27.1	9303	849	—	4783	2256	3073
8827	"	20:04	20:49	2.2	2.3	8.4%	2136	3450	657	55	602	12.8	4194	263	—	2566	876	1593
8828	16/10/81	5:15	5:20	7.2	8.1	24.9%	26	113	9	2	7	.2	103	10		47	25	21
8829	"																	
8830	"	13:32	15:08	5.0	6.4	7.3%	4820	8002	1494	109	1385	22.6	9011	747	—	5382	2258	2993
8831	"	15:10	16:18	3.7	4.9	5.4	3472	4075	942	51	884	10.5	4393	333	-	1129	318	1536
8832	"																	
8833	"	17:45	19:30	5.9	8.1	6.5	5423	8002	1640	106	1534	22.1	8221	683	-	2048	601	3067
8834	"	20:02	20:38	8.5	8.5	12.2	1724	4084	555	68	487	12.4	4265	544	-	809	393	1448
8835	"	20:38	22:02	6.1	6.2	8.7	4072	8002	1269	110	1158	24.5	7981	931	-	1766	657	2940
8836	"	22:02	22:31	5.7	5.8	7.1	1414	2332	432	31	402	6.9	2203	230	-	565	141	879
8837	17/10/81	23:33	0:27	4.3	4.4	5.5	5694	8002	1711	95	1616	21.8	7594	670	-	5596	1282	3081
8838	"	0:27	0:30	4.3	4.3	4.5	151	176	44	2	42	0.5	157	15	—	120	23	64
8839	"	1:53	3:07	6.9	7.0	10.1	3589	8002	1118	114	1005	27.7	8044	1080	—	4593	1669	2928
8840	"	3:08	4:32	6.5	6.7	7.8	4286	7822	1310	102	1208	26.4	7254	1046	—	5034	1170	2916
8841	"	4:34	5:46	4.6	4.8	6	3700	5643	1117	67	1049	17.5	5196	725	—	3822	817	2101
8842	"	6:46	7:54	7.0	7.4	12.0	3127	8002	1004	121	883	25.5	8774	1205	—	4367	2206	2903
8843	"	7:54	9:20	5.6	5.9	7.7	4327	8002	1330	102	1228	21.8	7500	1059	—	4817	1642	3030
8844	"	9:20	10:47	4.5	4.8	7.3	4455	7415	1556	99	1258	21.4	7595	1079		4911	1706	687
8845	"	12"	12:10	7.8	8.5	12.7	1213	4318	558	71	487	12.4	5170	552		2177	1778	1997
8846	"	14:00	15:01	7.3	7.0	15.8	2655	8002	895	142	753	27.4	9598	1446	—	3910	3948	2703
8847	"	15:01	16:18	6.0	5.8	10.6	3780	8002	1189	126	1063	27.6	8719	1232	—	4722	2796	2945
8848	"	16:18	17:30	5.5	5.3	6.9	2158	3479	649	45	605	10.0	3490	383	—	2261	846	1332
8849	"	18:45	19:57	6.8	7.8	12.0	3064	8002	988	118	869	29.5	7939	1399	—	4308	2155	2727
8850	"	19:57	21:15	5.5	6.2	9.2	3885	8002	1215	112	1103	29.7	7986	1309	—	4959	1875	2816
8851	"	21:15	21:30	*5	*5.5	6.9	638	1045	194	13	180	3.5	1025	140	-	695	219	380
8852	18/10/81	0:47	1:56	6.6	7.1	12.9	3308	8002	1073	139	934	26.1	9332	1305	-	4363	2304	2690
8853	"	1:56	2:37															
8854	"	2:37	4:20	4.7	5.1	6.0	5366	7510	1610	96	1514	20.6	7588	853	—	5382	1609	2764
8855	"	5:25	6:46	7.0	6.8	9.2	4013	8002	1257	116	1141	24.9	8067	1035	—	4826	1890	2920
8856	"	6:46	8:27	5.6	5.3	6.5	5140	8002	1558	101	1457	23.5	8086	959	-	5610	1580	2943
8857	"	8:27	8:45	5.4	5.1	5.5	914	1185	272	14	257	3.2	1241	122	-	939	196	432

T1 LUMI	⟨L⟩ x 10³⁰	∫Ldt RUN	∫Ldt	IBM / TAPE	BEAM PIPE (V)	REJECT EVENT FRACTION (%)	# BHABHA	# MULTI HADRON >22	BEAM ENERGY (GeV)	TPC 35 channel	
195	2.30	5.23	835.85	IBM	0.36	41.9	44	3	16.996		Beam dumped
616	4.91	16.13	851.98	"	0.84	42.8	271	10	"		
402	3.91	10.65	862.63	"	0.51	41.0	162	7	"	1327	Beam lost
669	4.89	17.37	880.00	"	0.60	43.9	292	4	"	1327	
366	4.52	9.67	889.67	"	0.45	40.3	144	2	"	1328	Beam Lost
5	4.79	0.12	889.79	"	0.55	29.8	1	0	"		
					0.55						New filling ID trip in pedestal run
705	3,89	18,75	908.54	IBM	0,5	42,1	226	8	16.996		
311	2.67	8.46	917.00	"	0,31	39.9	130	1	"	1326	stopped because no triggers
											no triggers
796	3.94	21.39	938.39	"	0.3	39.2	319	14	"	1325	Beam dumped
334	5.19	8.95	947.34	"	0.6	39.8	139	9	"	1325	
766	5.09	20.73	968.07	"	0.5	38.6	308	6	"		
271	5.15	7.29	975.36	"	0.3	36.5	95	3	"	1327	
881	4.10	23.37	998.73	"	0.2	36.3	336	10	"	1328	
79	3.25	0.49	999.22	"	0.2	33.0	8	0	"		Beams ~~lost~~ dumped
865	6.33	22.71	1021.93	"	0.65	39.8	310	11	"	1327	
860	5.37	23.00	1044.93	"	0.45	36.7	372	14	"	1328	stopped because of Time Out errors Br6 Cr4
594	4.31	15.95	1060.88	"	0.30	36	222	5	"	1328	beam dumped
768	6.52	20.39	1081.27	"	0.75	42.8	300	8	"	1325	
884	5.46	23.61	1104.88	"	0.45	37.4	389	10	"	1327	
687	4.11	18.31	1123.19	"	0.30	39.9	277	7	"	"	beams dumped
406	6.19	10.60	1133.79	"	0.55	45.3	179	7	"	1325	beam lost
584	5.83	15.47	1149.26	"	0.9	45.6	205	4	"	1326	
634	4.47	16.89	1166.15	"	5.5	~~46.6~~ 42.2	257	5	"	1326	
304	3.79	8.17	1174.32	"	0.35	38.4	128	3	"		beams dumped
768	6.66	20.40	1194.72	"	0.60	39.6	266	9	"	1325	
786	5.43	21.10	1215.82	"	0.50	39.5	820	11	"	1325	
104	4.30	2.74	1218.56	"	0.45	38.5	52	1	"		beam lost
791	6.21	20.56	1239.12	"	0.80	44.7	318	13	"	1326	
				"	0.40				"	1327	Nord crash . Run summary lost.
756	3.77	20.25	1259.37	"	0.35	38.6	323	6	"		beams dumped
854	5.62	22.55	1281.92	"	0.55	37.5	323	7	"	1327	
768	4.00	20.55	1302.47	"	0.40	38.7	300	9	"	1325	
115	3.35	3.06	1305.53	"	0.3	39.0	48	1	"		beams dumped

12:15 "NO TRIGGERS" → Jet chamber runs down → Error = magnet trip
Indeed it has tripped. Call Ke, "Pumpen aus Fall", Meke said, pump was too hot but it wasn't.
12:30 running again
JDAS ERROR 44 / 703 → IBM online error deck 2.
14:50 Beams dumped.

16^{00} Eckler and Marshall on shift

New fill just started. Beam conditions not good but PKR say they have done all the tuning etc they can do.

18^{10} 3/4 of beams lost. PKR know not why. Refill anyway.
18^{50} New fill: Slightly better than the last.

Notice, that since the new filling, the test TDC #3 histogram is all in overflow.
Since we don't know what is histogrammed, we don't know if we should panic.
20:49 Beams lost
21:00 Synchrotron-trouble for ~30 min
22:00 Restart 23h → lower magnet to 4000 A
23:45 Magnet at 7100 A. Start injection

24^{00} Barlow & Takeda on shift.
1^{05} Injection successful background optimization proceeding
1^{37} Background at falling towards reasonable levels — and Mark J demand a new fill. E$_c$ (Current now 5 ma on 5 ma).
7^{05} Excitement at last! Magnet Trips off. Vorlauf < Pump 2 zu and Pump 1+2 anfall. Will not reset. Call K.
7^{23} K group reset the magnet.
08:00 Darvill & Steffen on shift.
09:50 Howard Wills removes stop cable from trigger box to make some tests on the on-line program.
09:40 Call PKR to see what the problem is and how long they need to fix it. There is some sort of vacuum trouble which may take 2 hours to fix.
09:46 The message on the screen now says "Restart 11:00 am." we wind the magnet down to 500
10:26 Call PKR to ask them to call us before they restart so that we can reset our magnet current.
11:40 wind the magnet current back up again - P.K.R. think they are ready for injection
13:30 Run 8829 started and stopped due to ID trip during pedestal run.

13:33 Run 8830 started
15:08 Run 8830 ended
15:10 Run 8831 started.
15:40 ID trip — spurious tank pressure alarm.

16^{00} Heinzelmann & Warming on shift
16^{15} no triggers, but beam is still here, ID is on, we can't find the reason, call Krehbiel
16^{30} beams dumped, soon thereafter Krehbiel comes, he checks through everything, seems alright so we wait for a new fill
17^{40} new fill ready, but high background 2V BP, we ask PKR for further optimization
one BP counter gives high contribution to sum signal, taking this out gives BP = 0.3 V
we switch on, ID currents are low as usual
20^{40} Tektronix display jammed, Roger Barlow helps us to free it

17/10/81
0:00 Bowdery & Kaneki on shift.
0:30 Beams lost.
01:44 Green light on HT box appears to have broken ("last stage of POWER UP" button)
02:01 We noticed "STOP cable" was left unconnected - and made it back to trigger box.
02:28 JDAS / Error 56 TOF bank length is 465 words.
03:14 " 56. " 422 .
03:52 JDAS / Error 44. Time out BR 6 CR 4.
03:58 LG Thresholds changed. "50mV" ⟹ "40mV"
03:59 JDAS / Error 44 Time out Br 6 Cr 4
04:34 Many Time out Error's occurred. [Br 6. Cr 4] We powered on and off then restarted data-taking.
05:46 Beams dumped
06:43 New filling ready.
07:33 JDAS / Error 56 TOF bank length is 422 words.

8^{00} Barlow & Coats on shift
8^{12} JDAS errors 44/302, 56/422, 44/702
8^{50} Muon crate 1 producing mysterious hits in that they are all either single or quadruple — no doubles or trebles. Cured by changing the status board.
9^{20} End 8843. Start 8844

12^10 New fill. Spurious (?) pressure alarm on I.D. held up start of run for some minutes. Spent some time chasing the wrong problem as the lamp in the green light on the HV control is kaput.
12^41 Start run 8845
12^50 beams lost due to transmitter feature ; ID tripped.
14^00 new filling
background fairly high ; asked PKR to improve on it.

16^00 Kawabata, Olsen on shift
16^45 3 JDAS errors 44/703, 56/422
17^00 beams dumped
18^45 start run 8849. After a few minutes we get a (spurious) spark alarm in Ring 1. (BP current ≈0.65)
23^00 Short Break. Restart 0.^00 Run Magnet down

18/10/81.
0^00 Barlow & Kanzaki on shift.
0^40 New filling. Rather high BP current. ≥ 1 V
0^50 Run 8852 starts. BP current ~ 0.8 V.
1^25 JDAS / Error 44 Time out Br 7. Cr 3.
1^28 " " "
1^40 " 56 ToF bank length 422 words.
2^37 JDAS error 44 : 302 — Then computer stops. Dead. Master-clear. Restart OK but run summary lost.
4^23 Beams dumped. ↑ of course!
5^25 New fill
5^50 Many JDAS 44 — 703 errors

8^00 Pearce & Kobayashi on shift
8^45 Beams dumped
9^35 New fill
10^00 call PKR to ask why they can't optimize our background (is at present 1.3 V) They say their information is not sensitive enough! With telephone feed back they manage to reduce the BP current to 0.45 V (at 7.9 + 7.9 mA)
To whom it may concerne: please provide PKR with more sensitive information!
done!

10^30 Magnet trip — no indication in S.C.R. of what is wrong & we cannot reset. Call K group.
K group estimate at least 2 hours to fix magnet.

12^41 Magnet now fixed. Ten of the large fuses had to be replaced!
start run 8857

13^00 Beams lost ; ID tripped
13^45 New filling ready
14^03 Asked PKR to make background lower. → B.P. current = 0.45 V ($I^+ = 8.5$, $I^- = 8.2$ mA)
15^40 LG threshold histograms are empty. Stop Run 8861, restart NORD-50.
16^00 Meier + Heuer on shift

17^00 The configure files have been altered so that ZSEND is now started automatically (at 0%). (HEM)

19^15 JDAS error 56 / Subcom 422 TOF-bank wrong length
00 Olsson, Knobloch on shift.
0.20 Heuer on his way home drives by at PKR. Checks what is going on with our Background Meter. He found out that there was a 1:10 attenuator at the instrument there. That's why they couldn't see our background all the time
0.30 New scales in YH MON histograms allocated. ~~Read Inputs~~. Expanded scale, Peaks po. can be counted
0.40 JDAS Error 56 Subcom 422 (ToF bank wrong length). easily.
0.55 " " 44 703 Task 1 (DLD Timeout)
1.00 Deadtime int. went suddenly to 79%. BP 0.75, Complained at PKR. It seemed to have helped. BP → 0.65 DT 70%
Standard - Histograms taken. There are wrong rates in total!
1.30 IBM Busy flashes. Concurrent with DISK dump ?
3:20 JDAS run 56 sub 422 (TOF Bk Wrong length)
3.32 Beams dumped at Mark 3 request.
4.40 JDAS run 56 sub 422 (— " —) Run stuck
5.32 Run 8869 : No errors etc occur at end of run. Hangup for unknown reasons. Tried Event reset and Manual source selection → Scaler records seem to be missing. Run stopped.
5.40 ID Trip. Anode current alarm
6.20 JDAS Err 44 / 604
7.15 Dump request. pity about this nice beams. Run 8870 is new record : 95.4 nb^{-1}
7.75. From now on Machine shifts several days ~~to~~ to prepare for new energy at Wednesday. Magnet shall stay on! We should give PKR a on-call-Phone No in case something is wrong with ~~Lumi~~ Lumi measurement. MAGNET still on at PKR's request.
8.00 Allison, Wagner. Noone told us it was Machine Physics!

I gave H Wriedt's # 3581
and my own # 2585

RUN	DATE	START	STOP	I^+	I^-	DEAD TIME (%)	TIME (sec)	RECORDS OUT	ALL TRIGGERS x10⁶	TΦ REJECT x10⁶	TΦ ACCEPT x10⁶	T1 ACCEPT +POSTPONE x10⁶	T2 ACCEPT	T3 ACCEPT	T2 3TOF 3TR.	T2 COLLIN	T2 ≥2TOF LG>1 ≥2TR	T1 LG>4
8858	18/10/81	10:07	10:39	6.8	7.4	9.5	665	1394	209	19	189	3.9	1423	170	–	782	375	465
8859	"	12:47	13:04	4.9	5.4	5.8	815	1177	250	14	235	2.9	1099	119	–	755	232	(7602)
8860	"	14:04	15:25	6.9	6.7	8.7	4070	8002	1250	108	1141	24.6	8411	1045	–	5135	1993	2880
8861	"	15:26	15:41	6.7	6.5	7.5	749	1297	227	17	209	3.9	1293	179	–	805	285	463
8862	"	15:42	17:00	5.6	5.4	6.7	4006	6208	1219	82	1137	19.3	6730	789	–	4568	1318	2273
8863	"	17:58	19:16	6.8	6.9	10.1	3816	8002	1208	122	1086	24.3	10204	1070	–	4854	2036	2721
8864	"	19:16	21.01	5.5	5.5	6.3	5400	8002	1630	103	1527	24.0	8455	915	–	5750	1692	2926
8865	"	21:01	21.47	5.0	5.0	5.1	2388	2877	707	36	671	8.2	3164	284	–	2340	526	1088
8866	19/10/81	00.04	01.06	8.53	7.88	19.8	3025	8002	963.7	123.5	840	27.6	9299	1778	–	~~1358~~ 4785	2303	2433
8867	19.10.81	1.06	2.36	7.31	6.65	7.9	4538	8002	1385	108.8	1277	25.1	8274	1249		5283	1742	2820
8868	"	2.36	3.32	6.00	5.40	5.0	2867	3746	866	43.6	822	9.7	3821	335		2729	688	1391
8869	"	4.33	5.32	9.15	8.69	10.7	2902	6179	915.3	98.1	817.2	18.5	6048	865	–	3538	1441	2264
8870	"	5.33	7.06	6.72	5.71	6.7	4707	7892	1424	94.7	1329	20.5	7388	811	–	1896	501	2884
8871																		
8872	20.10.81	12:44	13:13	*)	*)	6.4	1361	1786	407	26	378	3.4	1954	211	–	1226	406	591
8873	"	14.05	15:10	7.4	6.5	14.2	3021	8002	1004.8	142.7	862.1	16.2	8301	1407	–	3575	3211	2785
8874	"	15:20	16:23	6.2	5.4	11.1	3058	6034	979.3	108.8	870.5	12.2	7254	855	–	3281	2643	2124
8875	"	17:17	18:24	–	–	9.9	3281	6815	1026.6	101.7	924.9	13.2	7672	1025	–	4064	1525	2353
8876	"	19.20	20.42	8.25	8.40	9.1	4031	8002	1261	114.6	1147	16.1	8361	927	–	4692	1847	2851
8877	"	20:43	22:19	5.0	5.2	6.7	4891	7640	1488	99.7	1388	13.7	7671	722	–	5020	1483	2832
8878	"	22.24	23.39	9.0	9.1	5.2	4914	5973	1434	74.6	1359	9.4	5948	679	–	4263	993	1966
8879	21.10.81	1.14	1.53	7.4	7.5	9.9	1741	3627	555	55.0	500	8.3	3660	516	–	2070	716	1407
8880	"	1.54	3.03	6.3	6.4	7.5	3438	5994	1053	79.2	974	12.5	5664	659	–	3605	1017	1948
8881	"	3.34	3.57	5.6	5.7	5.1	1762 2390	3443	375	30.5	3.1	1557	147	–	965	251	494	
8882	"	4.04	4.52	4.9	5.0	5.3	2486	3017	745	39.2	705	6.0	3201	283	–	2294	507	1116
8883	"	6.40																
8884	"	7.10	8.42	5.2	6.2	6.9	4541	8002	1400	114.3	1286	17.7	8301	875	–	4804	1328	3170
8885	"	08:49	09:20	5.16	6.2	6.6	1550	1902	410	22.1	388	3.4	1752	163	–	1320	295	660
8886	"	12.20	12.24	8.8	7.9	8.6	167	407	50	5	45	0.8	317	48	–	189	78	141
8887	"	12:35	13:14	7.3	8.7	8.7	1944	3650	602	52.7	550	8.4	3481	400	–	2129	773	1287
8888	"	13:18	14:26	6.1	4.7	6.7	3365	5006	1018	67.7	950	11.8	5061	562	–	3355	1059	1799
8889	"	17.19	18.29	7.96	8.21	8.8	6481	5596	904	80	824	13.3	5575	643		3396	1051	1897
8890	"	18.31	19.51	5.3	5.5	7.1	4071	6351	1258	87.3	1150	13.5	6777	600		4196	1511	2185
8891	"	19.42	20.29	4.8	5.0	7.6	1761	2312	541	41	500	4.47	2283	198	–	1590	445	834
8892	"	DID	NOT	START		CORRECTLY	–		STOPPED	DURING		LG	PEDESTAL RUNS.			–	–	–
8893	"	20.29	20.50	4.81	5.0	4.9	1029	2018	307.5	14.9	292.6	2.3	1297	97	–	832	224	414

T1 LUMI	<L> x10³⁰	∫Ldt RUN	∫Ldt	IBM / TAPE	BEAM PIPE (V)	REJECT EVENT FRACTION (%)	# BHABHA	# MULTI HADRON	BEAM ENERGY (GEV)	TDC 85. (channel)	i.e. Peak in YHIMON Hist. No 5 ✓ it is the scale dot at the (left) of the max bin
106	4.27	2.84	1308.37	IBM	0.45	38.3	38	0	16.996		
(776)	3.76	3.07	1311.44	"	0.3	35.9	43	0	"	1327	Beam lost
740	4.85	19.92	1331.16	"	0.45	40.4	220	8	"	1327	
111	4.01	3.00	1334.16	"	0.35	38.5	/	0	"		
497	3.30	13.20	1347.36	"	0.35	41.0	197	8	"	1328	Beams dumped
688	4.63	17.91	1365.27	"	.5	47.1	236	9	"	1328	
689	3.43	18.52	1383.79	"	.35	39.8	232	11	"	1328	
240	2.68	6.39	1390.48	"	.25	41.2	93	3	"	1328	Beams dumped.
648	5.61	16.96	1407.44	"	.80	44.9	232	10	"	1328	
702	4.12	18.70	1426,14	"	.60	40.0	292	8	"	1327	
382	3.58	10.25	1436,39	"	.38	38.4	152	6	"	1328	Beams dumped.
681	6.23	18.07	1454,46	"	0,7	39,1	292	8	"	1327	See note pg. 69
947	5,39	25,39	1479,85	"	0,6	36,9	379	10	"	1326	Pump request, no forewarning !
											Many errors. Ignore this run.
115	7.74	~~3.73~~ 3.73 ~~4.83~~ 5.58		IBM	.45	40.2	41	1	17.495		*) "0" on run-summary, really ≈ 5×5 in A !
738	6.91	20.86	24,59	"	0,7	41.0	274	7	"	1325	
372	3.40	10.40	34.99	"	.55	44.8	175	5	"	—	terminated for safety. → beam dumped.
554	4.62	15.16	50.15	"	.60	42.6	213	11	"	1325	Beams lost.
953	6.58	26.54	76.69	"	0.65	40.6	407	7	"	1326	
849	4.95	24.23	100.92	"	0.5	38.5	364	13	"	1326	terminated because of "BAD EVENT STRUCTURE"
570	3.37	16.23	117.15	"	0.38	38.6	224	2	"	1327	
320	4.97	8.65	125.80	"	0.6	39.0	120	2	"	1326	
482	3.92	13.46	149.26	"	0.55	39.7	192	7	"	1327	
122	2.93	3.40	~~152.66~~	"	0.45	40.6	0	0	"	1327	
291	3.33	8.29	160.95	"	0.35	39.7	147	6	"		Nonsense. Neutron are not true.
											only 1 wint, ignore this run
1097	6,61	30,02	190.97	"	0.6	40.0	411	13		1324	
249	5.27	7,11	198.08		0.4	33.9	108	3		1327	Beam lost
54	9,13	1,52	199,60		0,65	29.5	22	0	17.493	~~1325~~	Run stopped. "bad event structure".
493	7.19	13.98	213.58	"	0,6	37.5	171	5	"	1325	Run stopped. "bad event str."
522	4.39	14.78	228.36		0.58	38.4	~~171~~ 257	5	"	1326	HV error on Lumi happens
739	3.21	20.78	249.14	"	0.65	38.8	306	6	17.493	1326	Don't believe trigger time in seconds for this run.
732	5.04	20.51	269.65	"	0.55	40.9	272	14	"	1326	
277	4.43	7.79	277.54	"	0.40	37.5	104	1	"	1325	
—	—	—	—	—	0.34	—	—	—	"	—	Run LOST DURING LG PEDESTAL CHECKS.
135	3.80	3.91	281.45	"	0.33	–	60	1 776	"	not taken	

13^{00} 19/10/81 Magnet ON. (At request of PKR).
13^{13} Magnet at 7500 A. 1600 Naroska, Minowa
18.30 Still the same, very boring.
19.49 Magnet tripped "Fault", green lights "Kühlanl. < 35°C" on
Call K people.
They are here.
Call G. Pearce.
22.45 A faulty relay in the A.C. overload circuit has been replaced.
The old one suffering from dirty contacts (or weak springs).
I hope this has effected a cure. DLH.

0^{00} Heuer / Eichler
20/10/81

3:40 Lumi-Run. We take data. Problems with DL8 / ~~K34~~. Also error in inproc rejection (program was changed). Ignore run 8871
↑ Solved ↑ solved

5:00 Beam energy changed to 17.496 GeV. Lumi = 2.2 E30 SL = 8.75 E28 6.5 x 6.5 mA beam
Since PKR is occasionally optimizing the beam, we leave the jets off!
5:55 Lumi now 3.5 E30, SL = 18.64 E28 6.0 x 6.0 mA
6:15 Beam lost
6:30 Run magnet down (short break)
7:30 Magnet up again. Start injection

8.00 BETHKE / BAMFORD/ALLISON on shift

We are told that ↙ By bad shift (they said PKR wanted to do machine studies and for us to take runs without the jet chamber). JJ is still machine physics but the message on the screen asks us to switch ON and start Luminosity Run. Please PKR to see what is happening. They say they are still going to optimize the beams and we will have machine studies until 7:00 wednesday (21/10/81) but they need luminosity values from us so we still have to start runs (without J.D. though). Short runs but do not write any data out.
8.50 the jet chamber went on but we get just ch high current message.
10.30 LUMINOSITY now 2.81 E30, SL = 15.99 E28 5.8 x 5.8 mA

6.11^{00} Beams lost
11^{58} Koch (?), PETRA coordinator (?), telephoned — apparently PLUTO are suffering from high background. Therefore it is proposed that the last 1/3 of next fill (later this afternoon and evening) be devoted to studying this problem. (We should measure our background.)
For next fill, ask PKR about beam stability — maybe, just maybe, we can take data. (Call JA on 3561.)
12^{02} Beams steady. BP + TOF on.
12^{42} Asked PKR what they are doing: Long-time optimization of the beams.
Maybe we are able to take data. They will phone if they will do something dangerous.
I'm going to start run with Jet-Ch.!
BP-current: 0.45 V, without changing
12^{45}: started run 8872. Jet-Ch. o/c. 17.495 GeV
13^{13}: beams lost, beam-current-alarm
14^{08}: New beams, stable conditions. After call to PKR: Start run 8873
14^{25}: Every ~ 15 minutes message from YSPY: "Trigger 2 input present when off: 0, 1, ..., 191"
histogram looks normal! What does this mean?
14^{30}: "Mon 3"-counter on main-DV only counts up to ~110 .. 120, then jumps back to 0 and so on.
Some Error?
15^{40} Stopped YHMON & printed histograms. It is RECOMMENDED that YHMON be started for only 1000 events to reduce its effect on deadtime when used in conjunction with Event display. HEM

16:00 Steffen and Odaka on shift.
16:23 Telephone from PKR. They will start the beam optimization, and it may be dangerous for us. We terminated data-taking (RUN 8874) and powered off JD-HV.
:36 beam dumped.
17:00 In the last run (8874), the noise level of LG linear-sum was 60 mV, but the LG-thresholds were set at the values corresponding to 45 mV. They should be adjusted at the begining of the next run.
:08 "INJECTION" finished.
:17 BP-monitor is 0.6 V and stable. → RUN 8875 started.
:22 LG-thresholds were adjusted. (Noise level = 60 mV)
18:14 YSPY error massage: BP TDC no hits, 12 ~ 21
TRIGGER 1 INPUT MISSING. 12 ~ 21) Power-fail of a CAMAC crate.

:25 beam lost.

19:25 Now the LG noise level is 55 mV. Thresholds were adjusted.
22:19 JDAS ERROR 44-201, 44-703 etc. and a message "BAD EVENT STRUCTURE".
→ terminated run 8877, and then started 8878.
:25 ~~ID Anode Current~~ ID-Alarm (Anode Current). → Reset

21.10.1981
00.00 Cords and Nozaki on shift
1.05 new filling
1.42 ID tripped
somebody removed trigger inhibit for ID voltage-off.
runs 8872 to 8879 can be affected.
YVOLTS complains about wrong LG voltages; it is probably a fault in the read-out system; an expert will be called in the morning.
3.30 Shinoa found that the plug at the back of the DVM was loose; HV reading is ok. now jet chamber HIGH CURRENT: FAULTY PARTS 95/96, but chamber high voltage is still on. BP Anode current is OK.
RUN 8881 NBHABHA=0. Total rg = -0.6% cosmic=0
There are so many strange things in this run, that we must throw away the data.
Now the digitizers are all over the place:
the MIPROC stopped working; the Nord-10 produces funny histograms and error messages and the plug of the HV-DVM unplugged itself again.
4.00 => everything repaired by pushing programs and plugs.
4.30 if TKR adjusts the quadrupols (in the PLUTO area) to compensate the PLUTO septum magnets, they can easily change our luminosity by a factor 2 to 3. This has to be watched during the next shifts!
4.52 beams dumped
6.40 new filling, lost immediately; run 8883 stopped after 1 event
7.10 next filling
0820 Darvill & Kawabata on shift.
0859 run paused - no triggers - ID trip - no audible alarm. (current run 8885)
0920 ID trip - beams lost
0930 there is now a short break so we could the magnet current down to 3000A
10.50 "Achtung Pete wird eingeschaltet" so we turn up the magnet current again to 7500A
11:35 injection actually begins 12,16 we switch on the high voltage.
12:20 error 44 subError 214 BP-AC2099 timeout. Reload program

13:15 error 44 sub. 214 => stop the run 8887. Restart DAS system and start the run 8888. Stop run and start new one would do also!
14:45 Luminosity figures all fall to zero - this is due to an crate of tagging hood glass HV tripping off - reset successfully but this corresponded to beam dump

16.00 GODDARD & HEDGECOCK (X ~~[redacted]~~ NAROSKA) on SHIFT.
~~Start~~ run 8889 - ID tripped after ≤ 5 mins (ANODE CURRENT).
persistent error 44, sub. 214, stop run (8889) and ~~start~~ start new run.

19.50 persistent subError 214 again, IBM on-line sub error check 2 run stopped
new run started

20.30 Again, same problem as above, stopped the run.
The pattern of errors is always the same.

error	44	sub. 703
"	47	0
"	44	203
	etc.	

21.00 Talked with Eichler. Miproc for event selection is left on, but B.P. of miproc are turned off. Also the start signals into these miproc have been pulled out.

21.40 New fill ready. Our B.P. background very high. Pulled out #16, new B.P. ~0.5 (New replaced).

0.00 Rowe and Zhang on Shift 22/10/81

1.50 Several JDAS ERR 44 SUBERR 703
" 47 " 000
- didn't stop run. Seems to be OK now.

2.50 2 HV WRONG message. Line printer says YVOLTS: TAG - MFR=61 CHAN=26 HV=1.495 SHOULD BE 1.500. Cleared the message - Wait to see if it occurs again.

4.00. Again occurs. Again we clear it. We assume that it is OK to leave it for a while because it is only 5V down.
I reset channel 26 on unit 61 according to procedure in JDAS folder. However the voltage readout says 19 or 20 on the LED (what does this mean?) Also the readout did not blank-out at all. Henning says that the HV on the crate should be off first.

76 Run	DATE	START	STOP	I^+	I^-	DEAD TIME (%)	TIME (SEC)	RECORDS OUT	ALL TRIGGERS $\times 10^6$	T0 REJECT $\times 10^6$	T0 ACCEPT $\times 10^6$	T1 ACCEPT + postpone $\times 10^6$	T2 ACCEPT	T3 ACCEPT	T2 STOF 3TRK	T2 COLLIN	T2 $\geq$2TOF LG>1 $\geq$2TR	T1 LG>4
8894	21/10/81	21:47	22:55	7.27	7.28	8.4	2229	4319	687	57.7	6295	9.4	4063	468	–	2435	976	1517
8895	"	23:17	0:39	8.15	8.30	8.9	4087	8002	1266	110	1155	17.9	8374	845	–	4564	2413	3067
8896	22/10/81	0:39	2:15	5.0	5.2	6.5	4890	7310	1481	95.6	1386	15.5	7896	705	–	4894	1921	2664
8897	"	2:48	4:11	8.39	8.19	8.3	4162	8002	1279	105	1173	18.9	8085	850	–	4491	2197	2893
8898	"	4:11	5:30	6.34	6.24	5.7	4041	5712	1216	69.7	1146	12.6	5980	542	–	3859	1313	2061
8899	"	6:52	7:16	8.07	8.02	8.4	1151	2242	356.6	30	326	6.2	2349	226	–	1223	642	807
8900	"	7:16	8:57	7.21	6.83	6.3	5069	8002	1552.5	97	1454	16.2	8026	677	–	4895	2080	3725
8901	"	8:59	10:46	4.1	4.4	5.7	5412	8002	1650	93	1554	11.0	6677	493		4689	1535	2448
8902	"	13:24	13:29	5.9	5.8	8.4	255	439	76	6.3	69	0.7	423	25		243	120	133
8903	"	15:09	15:31	6.9	6.7	10.8	884	1827	287	33	253	4.2	1699	200	–	875	592	1034
8904		15:41	16:39	5.7	5.6	8.1	2849	4972	893	73	820	11.9	5383	544		3038	1709	1739
8905	"	16:40	16.56	5.4	5.3	6.2	800	1957	248	15	230	2.9	1252	125	–	778	337	437
8906	"	16:58	18:00	5.4	5.3	10.3	2954	11626	946	102	844	8.9	9454	358	–	2764	6358	6606
8907	"	18:42	20:27	5.2	5.8	9.4	4830	8002	1516	142	1374	16.9	10994	805	–	4822	2452	2667
8908	"	20:24	21:10	4.7	5.2	5.0	2397	4560	717	36	676	5.6	2957	221	–	2076	651	1064
8909	"	22:51	0:12	6.7	5.8	10.9	3983	8002	1254	136.6	1117	19.8	10727	806	–	4461	2001	2665
8910	23.10.81	0:13	1:45	5.3	4.5	6.1	4686	6643	1427	86.7	1340	14.2	6812	588	–	4576	1256	2374
8911	23/10/81	3.08		7.8	7.03	8.1	4594	8002	1432	116	1317	17.7	7786	1068	–	4892	1625	2785
8912	"	4.41	5:13	5.9	5.3	11.8	1419	2277	459	54.3	405	4.21	1962	437	–	1320	383	719
8913	"	5:33	6:14	4.8	4.2	5.5	2153	2665	647.3	35.8	611.5	5.28	2842	243	–	1936	535	960
8914	23/10/81	7.10	8:55	7.7	8.2	7.0	5350	8002	1623	113	1515	19.5	8875	868	–	5407	1858	2830
8915	"	8:56	9:47	4.6	5.2	5.9	2589	3370	784	46	783	6.7	3871	3300	–	2305	886	1236
8916	"	13:44	15:27	4.1	5.0	8.7	4971	8002	1541	134	1407	17.0	8572	724	–	4789	2789	2941
8917	"	15:27	16:02	3.8	4.7	6.9	1704	2124	532	36.7	532	3.7	2252	141	–	1558	578	764
8918	"	17.46	1744	2.28	2.55	8.4	3914	7050	1214	102	1112	15.6	7251	1674	–	4117	2131	2559
8919	"	20:03	21:17	5.8	6.1	13.9	3539	8002	1152	161	992	21.2	13012	825	–	4198	2454	2750
8920	"	21:17	22:51	4.6	4.9	7.4	4777	8002	1455	107	1348	17.3	8588	651	–	4720	1372	2629
8921	"	22:52	23:15	3.6	4.4	5.3	1223	1754	369	19.7	349.7	3.03	1554	121	–	1062	268	568
8922	"	23:55	0:38	7.4	6.8	8.5	1581	3677	493	418	451	7.2	2934	279	–	1666	658	1002
8923	24/10/81	2:17	2:23	4.8	5.4	5.3	295	570	87.5	4.65	82.9	0.89	378	30	–	263	61	129
8924	"	2:34	3:01	4.4	5.0	5.1	1423	1644	415	21.1	394	3.53	1721	143	–	1213	325	584
8925	"	3:54	5:45	5.0	5.7	7.6	5233	8002	1596	120.5	1476	12.4	9115	716	–	5242	2217	5530
8926	"	5:47	6:30	4.5	5.2	5.8	2232	2827	670	38.9	631	6.21	3140	220	–	2039	634	1005
8927	"	7:22	8:59	5.4	5.5	8.0	4888	8002	1514	120.4	1394	19.3	9407	731	–	5049	2422	2961

T1 LUMI	$\langle L \rangle$ $\times 10^{30}$	$\int$Ldt Run	289.45 $\int$Ldt	IBM TAPE	BEAM PIPE (V)	REJECT EVENT FRACTION (%)	# Bhabha	# multi hadr.	BEAM ENERGY (GEV)	TDC 85 CHANNEL	
545	6.85	15.27	29672	IBM	0.5	36.8	224	8	17.493	1327	NEW FILLING. BEAM LOST.
884	6.07	24.82	321.54	"	0.6	40.7	325	11	17.493	1327	NEW FILLING.
742	4.31	21.07	342.61	"	0.5	40.4	284	10	"	1325	Ran dumped
1342	7.06	29.35	372.00	"	0.65	39.8	467	13	"	1325	New filling
641	4.67	18.88	390.87	"	0.5	39.8	275	9	"	1325	Beam dumped
305	7.49	8.62	399.50	"	0.6	41.3	125	5	"	1325	New filling
1041	5.85	29.55	429.05	"	0.54	38.9	419	7	"	1325	
792	4.19	22.67	451.72	"	0.4	38.2	329	10	"	1325	beam dumped
47	5.26	1.34	453.06	"	0.6	33.6	11	1	"	–	beam dumped
199	6.33	5.60	458.66	"	0.55	37.0	68	2	"	–	Run stopped dre to T2 crate trouble
510	5.08	14.47	473.13	"	0.5	41	205	7	"	1324	
128	4.64	3.71	476.84	"	.85	40	57	3	"	–	
397	3.85	11.38	487.22	"	.4	62	139	6	"	1324	beam lost
776	4.52	21.81	509.03		.6	49	310	22	"	1325	
268	3.2	7.15	516.68	"	.4	38	112	4	"	"	beam lost
927	6.46	25.72	542.40	"	.6	48.7	330	13	"	1324	
766	4.66	21.84	564.24	"	0.45	38.9	340	17	"	1324	beams dumped
960	5.72	27.18	591.42	IBM	0.6	38.2	362	10	17.493	1325	
233	4.61	6.54	597.96	"	0.46	33.8	96	4	"	–	terminated due to IO error (see p.79)
264	3.48	7.50	605.46	"	0.47	39.9	119	2	"	1324	beam dumped
775	4.07	21.76	627.22	IBM	0.65	41.5	309	12	17.493	1324	
292	3.17	8.22	635.44	"	0.41	42.1	125	3	"		beam dumped
929	5.31	26.42	661.86	"	0.41	41.1	352	15	"	1325	
212	3.54	6.04	667.90	"	0.35	38.6	108	3	"	–	beam dumped
869	6.30	24.67	692.57	"	0.5	39.7	335	17	"	1325	beam lost
805	5.97	21.11	713.68	"	0.53	55.1	261	11	"	1325	← mistake
757	4.36	20.81	734.49	"	0.47	38.1	300	5	"	1325	
154	3.59	4.39	738.88	"	?	28.6	63	5	"	"	
310	5.50	8.76	747.64	"	0.56	21.2	108	6	"	1325	
37	3.67	1.08	748.72	"	0.4	4.0	11	0	"	–	
163	3.26	4.65	753.37	"	0.35	38.9	59	2	"	1325	Beams dumped
954	4.53	23.75	777.12	"	0.5	42.6	346	13	"	1324	
296	3.75	8.38	785.50	"	0.5	41.0	108	2	"	1324	Beams dumped.
737	4.21	20.59	806.09	"	0.58	43.6	327	6	"	1325	

1041

start of a run

6[55] Get 2HV WRONG again for same ~~crate~~ channel. It is out by 9V this time. I have reset it again but I'm not sure it did any good. Someone (expert) ought to look into it.

[Muon crate 8 ~~flashing~~ very frequently — especially in Run 8899.]
Hardware Reset no help — try muon crate reset. Seems to work.

7[19] Get 2HV again at the start of a run (it is programmed that way). It is out by 6V this time — I dare say it can wait till a decent hour!

8[00] 22/10/81 R. Eichler & H. Mills on shift

8:30 complaints about cleaning. Counting is very dirty.

9:45 Tasso (G Wolf calls) dumi dropped from $8 \cdot 10^{30} \rightarrow 4 \cdot 10^{30}$ Mark-J
$7.5 \cdot 10^{30} \rightarrow 4.7 \cdot 10^{30}$ JADE
$12 \cdot 10^{30} \rightarrow 9.8 \cdot 10^{30}$ TASSO

Tasso wants to run for one additional hour. Afterwards Mark J + Pluto have 10 min access
→ 1 hour background sept. for Pluto

12:25 Message "PLUTO-MAGNET DEFEKT" — PKR say this will last ½ hr and that we can run the magnet down again.

15:20 New fill ready. SL = 26.07 E28
15:25 beams dumped
14:00 Putz männer waren hier
15:10 New fill ready
15:13 ID-trip
15:35 Trouble with serial branch to Rucksack - Fan fail causes problems with T2 crate. error message was: "no Q-response from pressure reading."
15:41 Replace Fan. Start new run.
↳ in Camac crate in Rucksack.
16:00 Cords + Goddard
16:20 some TOF MEAN TDCs are fairly high.
↳ this problem was cured by reloading the Nord-50 program
run 8906: for a short time the thresholds of LG were turned too low
due to a broken DVM
The DVM for HV reading has been replaced by a spare one (Minowa)

~~TDAS~~ TDAS error 44 sub. 703
frequent missing muon crate #8 → now permanently missing for run 8909

23-OCT-'81 (FRIDAY)

0:00 Pearce and Odaka on shift
:27 "MUON CRATE MISSING." CRATE 8
:40 "
1:04 " many times
:30 " We cannot reset. A module in counting room does not work.

1:35 Muon crate 8 is missing and cannot be reset either in the hardware room or ~~on~~ on crate 8 itself in the pit.
Following the muon instructions we feel forced to ring an expert. Austin Ball suggested a faulty Lemo connection on the reset line on crate 8. We jiggle this contact about a bit and succeed in resetting this crate. Great! But the problem really lies, not in the reset, but in the high frequency of resets required. In fact crate 8 goes missing again after 5 min. We promise Austin to call him out again if this problem ~~seem~~ persists and becomes unbearable.
1:45 Beams dumped for a new filling. ← Run 8911
3:06 luminosity run — had to ask PKR to optimise beam though, to get B.P. current down to 0.6
Muon crate 8, surprise, surprise, is immediately missing. In fact it was never there at all. Once more we cannot reset in the normal fashion but have to resort to the methods suggested earlier by Austen Ball. This time we had to power crate 8 down and jiggle the status board about. This worked.
3:15 Well, that didn't last long. Muon crate 8 missing again. This time I think it must ~~of~~ have left the hall. We had to try all of Austins tricks together this time (including moving the status board to another station in crate 8) in order to reset. If this occurs one more time we will have to ring Austen once more. I haven't had so much exercise in years!!
3:20 Yes, it happened again. This time we note that the muon hit map has developed a few groups of 'spinning' chambers. This is new.
Nothing we do will reset this crate now. Call in Austen Ball.
5:07 Austin still chasing the muon gremlin from crate to crate.
5:15 Nord prints error message 37; IOX error ad infinitum
Address 50405 Level (Rec) 1

We try exiting TDAS & reloading NORD — this has no ~~of~~ effect. It is immediately clear that this fault requires some advice
50: 5.20 Telephone Ralph Eichler, who has seen such an errorance before. Reset system crate (power off/on) & restart. this works.
5.25 Continue data taking.
05:40 Muon system now OK. Problem was a faulty SCC (Z80 mproc board) in crate 8. This was fixed before the NORD error. Bad data structure messages which appeared after SCC was changed were apparently due to NORD / system crate fault.
HB.

October 23rd 1981

6.14 Beams dumped for new fill.
7.05 New fill ready. Talk PKR through an optimisation of our beam conditions once more – start run 8914.

8.00 Bartl & Glundinning on shift.

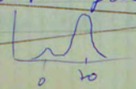
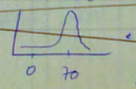
Compare lumi measurement - PKR / JADE: seems to be
The measurements agree within 3% i.e. dead time is properly taken into account by PKR-program. Dead time was 7%.
JADE: 3.2 MD: 2.6 Pluto: 4.4 Tasso: 5.9
check histograms of run # 8914
counter no 6 of forward p's has no ADC-signal however TDC ok (no action)

9.55 New fill requested.
Perform a test for the power cuts in Nov.
Switch off JADE + TASSO magnets
full Petra and ramp up with magnets 'off'

12.30 Still no beam PKR has difficulties to ramp. Beams get lost at ~ 7.3 GeV
Experts are at work.
13:40 Injection complete, magnet up to 7500A and start run 8916.
15:35 Tasso phone - they want a new fill in ½ hour, I agree.
16 00 Yamada + Murphy on shift.
17:45 (Run 8918.) ID HV couldn't be switched on due to an alarm in the dummy channel ("7th" in the right box). It was simply reset and went on.
17:55 JDAS error 44 / 703 / TASK 1.
18.17 " " 44/604/1 Someone in charge should check FWD-MU-CNTR - Ampl. Fiele 6
18.39 " " 44/703/1
18:45 " " 44/703/1
19:15 ID-trip due to beam loss PETRA energy reads 0!
20:40 (In run 8919). We got six JDAS ERROR 44 – 707's within a few seconds, then it recovered.
~ 21 45 Several JDAS ERROR 44 – 606's.

24-OCT-'81

0:00 Wriedt and Odaka on shift.
" ID-trip (Anode Current) PKR is still optimizing backgrounds. → pause the run
~ 0:30 Observe two holes in jet-chamber wire list. while Jan Olsson is planing. Two DL8s seem to have given up. After switching off/on the CAMAC-Crate 7/4 to cure the big numerous time-outs from this crate stop data-taking. Jan is on his way anyway.
1:07 Mr. Olsson has come.
2:19 One of the holes in ID-wire map has gone after a DL8 was pushed.
But another one could not be improved.
We started new run (8923).
2:33 Mr. Olsson has fixed I.D. successfully. → run 8924 started.
(2 DL8's and Crate Controllers exchanged...) DL8's for wires: 1328-35, 1336-43 (604)
3:00 Beams dumped.
3:33 INJECTION finished. UNDERSTATEMENT ??
3:54 BP-monitor is slightly moving, but doesn't seem to be dangerous. run 8925 started
:55 ID-trip Anode Current.
4:00 Beam condition has gotten worse. → paused run, and powered off the ID-HV.
:05 Now, the background is low (~0.55V) and stable. We restarted the run.
:15 LG-thresholds were adjusted. Noise Level = 40 mV.
6:30 Beams dumped.
7:21 Beams are ready. Run 8927 started.
Muon Crate Missing (Crate 7), just after the run started. → reset.

8:00 Heuer + Minowa on shift.
9:27 TASSO call us to say that the beams are dumped at 9:45.
9:48 Beams dumped.
10:35 ID switched off, prob. BP high current
10:41 $\mathcal{L}$ (JADE) = 3.5×10^{30} and $\mathcal{L}$ (MARK-J) = 3.6×10^{30} } are very low although these are from the first run of this fill.
10:54 $\mathcal{L}$ (JADE) now $5 \cdot 5 \times 10^{30}$
13:10 TASSO will request the beams to be dumped in 20 min.
13:15 ~~Std-histograms for this filling~~ look ok besides TOF OPPOSITE COUNTERS, which looks like  instead of  forget it!
Last Runs still o.k.
Since this is only of several conditions in reading counters, we don't bother.

RUN	DATE	START	STOP	I^+	I^-	DEAD TIME (%)	TIME (secs)	RECORDS OUT	ALL TRIGGERS $\times 10^6$	TØ REJECT $\times 10^6$	TØ ACCEPT $\times 10^6$	T1 ACCEPT+ POSTPONE $\times 10^6$	T2 ACCEPT	T3 ACCEPT	T2 3TOF 3TR	T2 COLLIN	T2 2TOF L6>1 2TR	T1 L6>4
8928	24.10	9:00	9:46	4.8	5.3	6.5	2388	3257	724	47.0	677	7.2	3843	266	—	2235	1033	1168
8929	"	10:23	11:55	5.5	6.1	8.8	4448	8002	1382	122.0	1260	19.6	~~4822~~ 4190	796	—	4822	2560	3943
8930	"	11:55	13:24	4.4	5.0	6.4	4642	6490	1405	90.1	1315	14.7	7028	561	—	4404	1804	2419
8931	"	14:13	15:45	5.8	6.3	8.9	4540	8002	1418	125.9	1292	23.0	9492	985	—	5070	3171	2851
8932	"	15:45	16.14	5.4	5.9	8.2	1401	2305	439	35.9	403	6.9	2627	309	—	1549	734	788
8933	"	17.31	18.09	6.9	7.0	13.4	1404	3453	463	62.0	401	9.2	4657	402	—	1754	1026	1144
8934	"	19.04	19	5.2	6.2	7.4	2661	4491	819	60.5	759	10.0	4315	413	—	2689	1003	1591
8935	"	19.59	21.26	3.7	4.9	6.7	4353	5462	1315	88.6	1227	11.3	5651	458	—	3963	1070	1343
8936	"	22:20	22:31	7.5	6.4	9.8	585	1033	166	16.3	150.3	2.4	1167	114	—	872	272	339
8937	24.10 25.10	2233	0019	5.8	4.8	7.3	5349	8002	1635	119	1515	19.7	8771	671	—	5316	1877	2989
8938	"	0019																
8939	"	0238	4:29	4.8	5.1	6.8	5656	8002	1717	117	1600	20.1	8933	695	—	5627	1688	2994
8940	"	04.29	0453	—	—	5.1	1187	1373	360	18.5	342	3.2	1537	84	—	1103	265	486
8941	"	8:40	9:55	5.95	6.39	13.8	3536	8000	1158	159	998	21.5	13467	759	—	4211	2281	2615
8942	"	9.56	10.36	5.1	5.8	7.0	2398	3279	648	45.6	602	8.2	3506	313	—	2209	735	1175
8943	"	10:39	11.30	5.12	5.95			3459										
8944	"	13.30	14.57	7.22	7.26	9.6	4311	8002	1352	130	1222	21	10241	878	—	4849	2342	2770
8945	"	14.47	16.24	5.96	5.80	5.8	5.8	1985	413	28	384	8.7	2085	206	—	1325	491	211
8946	"	16.14	17:50	5.7	5.8	8.8	4670	8002	1454	127	1327	20.4	9579	783	—	4966	1983	2781
8947	"	17.51	18.31	5.2	5.3	5.6	2068	2564	620	35.0	585	5.5	2729	215	—	1919	510	929
8948	26.10	1:56	3:50	4.9	5.3	9.2	4570	8002	1362	125	1237	22.3	8800	483	—	4966	1939	3125
8949	"	3:51	4:30	4.4	4.7	7.0	1992	2980	611	43	568	8.2	3314	393		2153	676	984
8950	"	5:54	6:11	7.0	7.2	12.4	851	2080	279	35	245	5.6	2424	268		1172	527	660
8951	26.10	6:57	8:35	7.37	6.45	7.2	4938	8002	1517	109	1408	18.8	8051	902	—	5106	1778	2741
8952	"	8:36	9 02	5.70	4.81	6.0	1372	1860	415	24.7	391	4.2	1913	173	—	1334	367	667
8953	26.10	13:56		7.8	7.4													
8954	~~27.10~~ "	~~16:18~~	16:02	5.7	5.3	17.6	4678	8002	1616	283.8	1332	18.28	8695	710	—	5089	2364	2837
8955	"	16:17	16:39	5.45	5.07	9.1	1046	1597	323.4	29.42	294.0	3.070	1586	134	—	1076	407	555
8957	"	19:10	20:04	6.7	6.3	11.5	2623	5490	839.0	96.21	742.8	13.31	7735	529	—	2990	1476	1883
8958	"	20:04	20:37	5.3	5.6	8.5	~~2523~~ 1573	2523	495.3	42.03	453.2	5.11	2517	236	—	1610	527	906
8959	"	20:48	21:18	4.8	5.1	5.8	1509	2002	455.6	26.62	429.0	3.674	2150	162	—	1485	367	705
8960	"	21:24	22:02	4.3	4.6	4.9	1961	2355	591.1	29.16	562.0	4.219	~~2495~~ 2426	186	—	1767	426	820
8961	"	23:30	1:08	5.6	5.1	6.9	4997	8002	1528	106.2	1422	14.89	8165	655	—	5122	1937	2927
8962	27.10	1:09	2:43	4.6	4.1	5.1	4860	6036	1462	75.	1386	10.1	6476	473	—	4463	1424	2108

T1 LUMI	$\langle L \rangle$ $\times 10^{30}$	$\int L\,dt$ RUN	$\int L\,dt$ 806.09	IBM / TAPE	BEAM PIPE (V)	REJECT EVENT FRACTION (%)	# GAMMA	# MULTI HADRON	BEAM ENERGY (GeV)	TDC 85 channel	
271	3.21	7.66	813.75	IBM		43.0	104	2	17.493	1325	Beams dumped
832	5.06	22.52	836.27	"	0.58	43.1	308	10	"	1325	
738	4.51	20.91	857.18	"	0.48	41.1	274	5	"	1325	
607	3.79 ①	17.20	874.38	"	.60	44.0	213	11	"	1324	① Why did we refill?
168	3.37	4.72	879.10	"	.52	42.1	59	1	"	1324	Beams lost
339	6.31	8.86	887.96	"	0,65	48.9	111	4	"	1324	Beams lost
571	6.07	16.15	904.11	"	0.5	36.9	233	6	"	1324	
634	4.12	17.95	922.06	"	0.4	38.8	238	6	"	1324	Beams dumped
113	5.87	3.08	925.14	"	0.7	48.2	47	0	"	1324	
916	4.76	25.48	950.62	"	0,65	41.4	340	17	"	1327	
				"	0.57						Beams dumped. No run summary due to NORD 10 failure.
885	4.36	24.65	975.27	"	0.54	41.9	369	13	"	1324	
152	3.66	4.35	979.62	"	.47	40.3	63	1	"		Beams lost
834	5.92	21.04	1000.66	"	0,75	43.9	318	5	"	1324	
384	5.13	19.76	1020.42	"	0,55	49.5	141	7	"	1325	
	4.32	10.49	1031.91	"	0.85				"	1326	Run summary lost
871	5.56	23.95	1055.86	"	0.75	47	317	9	"	1324	
231	8.85	6.51	1062.37	"	0.80	40	92	1	"	1324	
860	5.09	23.77	1076.14	"	0.63	44.5	307	11	"	1324	
293	4.00	8.28	1084.42	"	0.44	40.1	123	5	"	1324	Beams lost
831	5.26	22.99	1107.41	"	0.70	41.7	352	7	"	1325	
285	4.04	8.04	1115.45	"	0.45	41.5	114	2	"	1327	Beams dumped
209	6.74	5.74	1121.19	"	0.75	43.8	91	0	"	1324	Beams lost
996	5.71	28.22	1149.41	"	.5	38.8	394	16	"	1324	
217	4.69	6.16	1155.57	"	.45	39.0	87	7	"		Beams dumped.
				"						1326	Nord hang up. → no summary
938	5.71	26.71	1182.28	"	0.4	41.1	354	13	"	1326	
160	4.22	4.41	1186.69	"	0.4	36.1	63	0	"	~~1336~~	Beams lost.
640	6.62	17.36	1204.05	TAPE FI-113	0.7	50.7	249	5	"	1327	
291	5.22	8.20	1212.25	IBM	0.5	37.9	113	2	"	—	
216	4.11	6.20	1218.45	"	0.38	39.8	89	1	"	1328	terminated to check programs. (see p.87)
248	3.57	6.99	1225.44	"	0.33	39.0	102	5	"	1327	Beams dumped.
1017	5.74	28.68	1254.12	"	0.53	39.1	385	12	"	1328	
652	3.81	18.53	1272.65	"	0.35	39.7	260	6		1327	

15.05 Lumi rather bad (3×10^{30}), I complain (Mach) had already complained said PKR)

16:00 Olsson, Schmidt
16:11 Beams lost, ID tripped
17:30 Wieder Füllung. Beam optimierung ohne vorwarnung. Wir schalten aus
18:07 Beams lost, ID tripped
18:54 BP-Counter #16 ~~bad~~ fakes high background: taken out of run. Please observe future development!
Kraffiel observes high rate in PM #16 ! of BP-Counter. It's not a defective discriminator.
19:07 ID-trip
19:33 JDAS error 46, 1, 1 MIPROC out of sequence
19:57 Run 8934 aborts with a variety of error messages Timeouts (44) 703, 707. MIPROC errors 47, errors 51
Stop Run, start new one: several time-outs in Camac-Crate 7/7
707 was hit hard. It now behaves
20:33 ID-trip; partial beam-loss

25.10.81
0:00 P. Murphy + P. Steffen on shift
0100 JDAS ERROR 44-703-1 (once only).
0120 Beams dumped.
Cannot end run 8938. Gets no response from terminal. Re-starting NORD does not work. We phone R. Eichler (no answer) then D. Cords.
∴ no run summary for run 8938.
2:40 Terminal board of console writer was broken and caused a complete machine hang-up.
I replaced this board by a spare one D. C.
0429 Beams lost; PETRA power supply fault.
08.00 Zhang & Nozaki on shift.
08.39 New fill is ready.
11.25 No trigger message appears colour TV screen.
We pushed "pause" and searched for the source of the no trigger.
After a minute the terminal 9 has no response. PKR ~~asked~~ asked switch off high voltage.
But we could not stop the run.
NORD 10,50 reloaded.
12.00 PETRA has a problem. LINAC II defect. restart 12.45 h
13.34 Run 8944 started.
13.43 Lead glass threshold is adjusted.

25/10/81
1600 Matsumura + Minowa on shift
1612 new beams ready
1614 start run 8946
1832 Beams lost
1838 TV screen says „Kurze Unterbrechung".
1920 Injection start
1945 They have never succeeded
" Kurze Unterbrechung again.
2005 injection ... failed
2010 TV says restart is 21:00.
2055 now restart is 22:00
2200 PKP says " 23:00
2215 PETRA magnet power supply is in trouble,

26. 10. 81
00:00 Barth & Kinzelmann on shift
00:00 run down magnet.
~ 0:55 Start injection magnet raised -> 7500 A
1:50 Petra back
The working conditions for Petra are not optimum:
One 6-pole powersupply had to be replaced by a different one which however delivers less current than required (600A delivered 650A required).
2:40 Histograms checked during run # 8948 all are ok
3:00 The ~~old~~ Gould plotter invents additional dots when plotting events. The test plotting is ok. An expert should look at this problem.
4:16 TDC #85 jumped by 2 channels at the beg. of run # 8949
6:07 TDC #85 back to old value
6:15 Beams lost - ID trip

8:00 26-OCT-81 Mills & Yamada on shift

Tasso phone to say beams dumping at 9.00 then about 1/2 hr for PETRA to fix a magnet
9:00 Beams dumped PKR say we can run magnet down & they will inform us when to run up.

12[40] YSPY updated to include some Muon chamber problems. Don't panic if it produces errors (digitiser numbers). It would be useful to note some numbers down if it does detect errors though. HEM

13:35 New filling is ready. BP current; 0.8 (V). We wait a bit until they finish B.G. optimization. (for PLUTO)

14:07 JDAS error 44/703/1

14:09 IBM Busy for ~60 seconds!

14:10 LG threshold readjusted for 45mV (it was for 50mV).

14:14 IBM Busy.
Pressed F2 for pause. But after IBM was ready again pressing F2 didn't continue the runs ← The Nord had locked on level 8. Had to restart

14:49 In last ten minutes the IBM transfer has held up for periods of 58secs, 22, 16 & 36secs. IBM people say they know of no problems but will look into things.

15:15 Still more periodic IBM link trouble. Runs F58 (3219). Herr Teske said ~~it was~~ he knew we weren't getting through & that it wasn't the IBM's fault. Suspect he was testing something

15:18 Another 80 second break in communication.

15:27 More IBM link trouble. Run 3219 again. This time get Hochweller who says they are working on it and it will happen 3 or 4 times more!

16:00 Rieseberg and Odaka on shift

16[33] Beams lost

16[50] - 17[45] JADE Magnet at 4000 A

18[50] New Filling ready

19[09] Start Run 8957, on tape as IBM ERROR 53 persists We are asked for I^+, I^-, and E at beginning of run!

19:22 "Muon Crate Missing" crate 2

Problems with N50-Histograms:
F07 COUNTERS 02
but F03 JET CHAMBERS } not 02 → gives ERROR 14 in 35045 at 141527 outside segment Bounds, page 137
and F03 LEAD GLASS } → " " 103252 " " 164

19[45] We call D. Cords to discuss ~~to discuss~~ about the problems: $I^\pm$, E must be typed in, if small computer in front of the IBM is not working. Histogram Error must come from a destroyed program

20:20 All subcontexts of N50-histograms were checked.
F-08 JET-CHAMBERS
09 LEADGLASS
and 10 MUON-CHAMBERS
do not work properly. The others are O.K.

20:33 'IBM BUSY' appears frequently.

21:15 LG-thresholds were adjusted. noise level = 35 mV.

21:16 35045 is YMENU. This task must have been corrupted. Reload. This seems to be the usual task-overwritten syndrome that plagues us at intervals! cf the event display problem a week ago! HEM

22[02] Stop run 8960 for beam dumps

23[30] New filling ready. Start Run # 8961

27.10.81 0[00] A. Pekssen + A. Wagner.

2[40] beams dumped for refill

3[05] new filling ready

3[53] problems with LUMI measurement for runs 8963/8964:
after 1. HV-switch on in new filling we are no more getting Lumi. # Bhabhas ok
Tagging Histograms Lumi -z, +z, tagg -z empty. Try to get hold of H. Wriedt. No success
↳ Go to manual on mainframe 62. find ch Ø, 27 at Ø V, HV off.
↳ HV on, reset ch Ø, 27. → Lumi reading ok for run 8965...
did you try my new telephone-no.?

4[20] again Lumi problems: ch Ø seems to be guilty. Now HV-mainframe is showing no more information on the frontpanel, stuck at ch. Ø. We are nevertheless accumulating data.

4[57] beams lost

5[45] new filling ready Lumi measurement for run 8965 works after manual setting of HV values

6[35] beams lost, TV-black out, anode current alarm (I guess that HEW did some switching, also our light went dark) PKR-computers down etc etc

08.00 Tuesday 27/10/81 M. MINOWA & F. LOEBINGER

08.58 New beams start run 8967.
LUMI power supply appears to be O.K.

10.12 Error message for Lumi power supply comes up again. Lumi = 0 again.

10.45 Lumi power supply (mainframe 61 despite label "62" stuck on it) now reset by RAE by switching mains off & voltages set-up by program. Stop run 8968 — which has mainly LUMI power supply off & start run 8969 with supply ON.

From run 8968 on, Test TDC 1 has jumped by about 18 channels.

During run 8969 had intermittet time out in DL8 crate (707 suberror). Mr. Matsumura happened to be wandering around, and very kindly wiggled a few lemo cables. The problem appears to have gone.

12.30 Beams dumped.

13:15 Event and histogram display programs updated. HEM
14:00 Tagging HV-Power supply #61 exchanged and set to nominal values. VW

16:00 Takeda + Heuer
18:00 2 hours of unsuccessful injection are over
18:01 beams lost
19:00 Mr. Bartel explained why we have no beams.
When they start accelerating beams, cavity vacuum breaks down.
19:05 beams back !!! BP-rate meter: 10V
19:20 BP = .65, it doesn't go better according to Bartel (in PKR), so start data taking
19:30 first load cells of this run: DL8 for wire 600-607 mimg
20:14 Typically have to replace DL8 for wire 600-607, since nothing else helps.
20:14 We get 3x in a short time JETC-anode current alarms. No signs of beam loss
20:45 Std. histograms look ok
23:40 JDAS ERROR 44 SUBERROR 703 TASK 1 6 times
Mr. Heuer went into hardware room and only looked around, and error disappeared.

28/10/81

0.00 Matsumura & Hardt on shift
0.51 Beam lost (Run 8976)
5.13 Restart
6.58 JDAS Error 62 * 3
4) YSPY LUN Occupied

08.50 Wednesday 28/10/81 Rose and Yamada on shift
< 08.00 : temporary access to de-gunge our magnet cooling system.
11.55 Work on the cooling system is finished. Informed TASSO (coordinator) that we were ready.
Please note all JDAS errors 45-47, 61-64 in log book + suberrors RAE

12:00 New set of tagging-system EHTs installed. VW

13.00 Nothing is seen indicating PETRA restart. Asked TASSO to check the PKR & tell us. Answer is "Difficulty with the vacuum system and the control computer. They can start only after 14.00."

14.30 Magnet trip (still no beams)
We couldn't find the fault. Tried testing fault bulbs — found that the Rücklauf (Heizesch > 60°C bulb was inoperative. Reset and try to reach normal magnet current. Bulb should be fixed. We are told that the air was too hot in powerhouse.
15.00 Seems to be OK for the moment.
15.50 Get beams.

16.00 A. Ball + H. Riesberg on shift
beam optimization is finished. $I^+ \sim 91$, $I^- \lesssim 9.4$ mA
start RUN 8979
High rate ≈ 9Hz, deadtime ~ 20%
19.40 LG-thresholds re-adjusted
YHHON booked histograms are deleted !
17:15 — re-booked by Krehbiel

Newsflash:—
Zeppelin sighted over Jade!! Safely piloted by Luftike to make a soft landing on Dr. Eckhard Elsen

17:35 Several JDAS error 44's, suberror 703. DL8 #112 timout.

RUN	DATE	START	STOP	I^+	I^-	DEAD TIME (%)	TIME (secs)	RECORDS OUT	ALL TRIGGERS $\times 10^6$	TØ REJECT $\times 10^6$	TØ ACCEPT $\times 10^6$	T1 ACCEPT + POSTPRIME $\times 10^6$	T2 ACCEPT	T3 ACCEPT	T2 3TOF 3TR	T2 COLLIN	T2 $\geq$2TOF LG>1 $\geq$2TR	T1 LG>4
8963	27.10.81	3:11	3:34	7.5	7.6	9.8	1157	2302	362	35	327	5.4	2656	259	–	1419	885	969
8964	"	3:35	3:56	7.0	7.1	9.0	~~1885~~	1703	275	25	250	3.7	1771	183	–	952	591	688
8965	"	3:56	4:51	6.0	6.0	7.7	2762	4643	849	65	784	9.9	5061	467	–	2921	1490	1989
8966	"	5:46	6:35	7.0	6.8	9.6	2350	4979	753	72	680	100.6	5296	426	–	2622	1661	1380
8967	"	8:59	10.11	6.7	6.7	14.3	3327	8002	1095	156	938	20.2	11100	939	–	3994	4731	2761
8968	"	10.12	10.49	6.0	6.0	10.3	1670	2863	531	55	476	7.7	3369	351	–	1922	1132	1150
8969	"	10.49	12.29	4.7	4.7	8.4	5013	7659	1557	130	1427	18.2	8236	786	–	5069	2247	2831
8970	"	19.25	19:59	7.5	7.6	10.6	1523	3536	491	~~4951~~	439	6.7	3291	292	–	1636	910	1204
8971	"	19:59	20:01	9.4	7.6	13.8	62	183	22	3	19	0.27	151	11	–	78	42	40
8972	"	20:03	20:04	9.3	9.5		41	130	14	1.6	13	0.20	97	4	–	59	21	41
8973	"	20:16	22:04	5.5	5.6	6.6	5493	8002	1666	109.9	556	17.5	8625	775	–	5508	1713	2939
8974	"	22:04	22:12	–	–	5.6	375	538	112	6.3	105	1.0	523	37	–	388	84	191
8975	"	22:15	0:37	4.9	6.5	7.5	5093	8002	1572	118	1453	16.7	8549	699	–	5258	1670	2933
8976	28.10.81	0:37	0:56	–	–	5.6	606	815	182	10.2	171	1.6	864	53	–	613	153	285
8977	"	5:13	6:39	5.5	5.9	8.1	4184	8002	1317	130	1187	19.6	8639	876	–	4699	2059	2987
8978	"	6:38	7:58	4.4	4.6	7.3	3987	5602	1224	88	1135	12.7	6203	540	–	3378	1251	2076
8979	"	16.03	17.00	7.5	7.8	18.3	2513	8002	872	160	712	16.8	11832	800	–	3446	4901	3222
8980	"	17.00	18.26	6.0 to 7.5	6.2	10.6	4134	8002	1302	137.6	1164	19.7	9235	883	–	4962	2066	2822
8981	"	18.28	19.17	5.2	5.4	7.7	2306	3144	713	54.6	659	7.51	3305	329	–	2240	635	1044
8982	"	20:11	21:29	6.3	7.5	10.8	3405	8002	1075	116.5	959.2	16.5	7191	845	–	3804	1329	2464
8983	"	21:30	22:42	5.1	6.0	6.8	3680	8002	1127	76.3	1051	12.6	5668	610	–	3438	995	2118
8984	"	22:43	23:32	4.4	5.3	5.9	2503	4778	755	44.5	710	6.6	3340	302	–	2103	655	1236
8985	29.10.81	0:34	0:35	7.1	10.3	?	?	?	?	?	?	?	?	?	–	6	3	4
8986	"	2.01	3.14	6.9	7.4	14.1	2984	8002	977	137	839	17.7	10091	807	–	1390	1181	2831
8987	"	3.15	4.30	5.5	5.9	10.6	3709	8002	1175	125	1050	16.7	9468	760	–	1610	1110	2902
8988	"	4.31	5.17	4.8	5.3	8.2	2262	4078	714	58	656	8.0	4766	314	–	938	525	1492
8989	"	8.16	9.13	?	?	12.3	2932	7048	954	117	836	15.0	8781	669	–	3639	3506	2570
8990	"	12.30	13.47	6.4	6.6	14.0	3032	8002	998	139	859	21.5	9448	1060	–	4088	2734	2906
8991	"	13:47	14:49	4.3	5.2	9.1	2939	5278	921	838	837	14.4	5774	659	–	3386	1462	1941
8992	"	14:58	14:59	4.2	5.0	7.6	30	91	–									
8993	"	18.42	19:58	5.7	7.3	9.6	3729	8002	1179	113	1065	16.1	7888	752	–	~~4091~~ 4266	2094	2988
8994	"	19:59	20.23	5.3	6.8	7.3	1223	2064	372	27	345	4.2	2031	171	–	1270	447	793
8995	"	22:55	0:03	5.8	6.9	11.8	3313	7246	1061	125	937	18.5	8493	1021	–	4072	1908	2443
8996	"	0:04	0.43	5.1	6.2	12.4	1845	3095	590	73	516	7.7	3397	371	–	2066	592	1078

T1 LUMI	<L> $\times 10^{30}$	$\int$Ldt RUN	$\int$Ldt total	IBM/ TAPE	BEAM PIPE (V)	REJECT EVENT FRACT (%)	# Bhabha	# MULTI HADR	BEAM ENERGY (GeV)	TDC 85	
0	?	~ 10.58	1283.23	IBM	.60	42.6	142	6	17.443		} problems with LUMI counter HV $\int$Ldt estimated from # Bhabhas
0	?	~ 6.11	1289.34	"	.54	39.8	82	4	"		
187 ?	1.74	16.58	1305.92	"	.50	41.1	244	5	"	1327	beams lost (—"—)
585	7.06	16.59	1322.51	"	.56	41.0	242	6	"	1328	
559	4.73	15.73	1338.24	"	0.76	49.2	227	6	17.496	1328	LUMI supply 61 off
32	?	~ 8.18	1346.42	"	0.50	43.0	119	4	"	1328	$\int$Ldt estimated from # Bhabhas.
768	4.34	21.76	1368.18	"	0.47	40.7	323	12	"	1328	beams dumped.
353	6.52	9.92	1378.10	"	.70	34.2	133	4	17.495	1328	
16	7.31	0.45	1398.55	"	.50	25.0	4	0	5		} DL8 problem
10	6.87	0.28	1398.83	"		20.7	1	1	5		
803	4.11	22.55	1401.38	"	.50	40.5	360	5	4	1328	
60	4.50	1.69	1403.07	"	.35	35.3	21	1	4		beams lost
903	4.98	25.35	1428.42	"	.45	40.6	353	13	4	1327	
86	3.97	2.40	1430.82	"	.37	38.2	18	0	"		beam lost
872	5.82	24.35	1455.17	"	.62	41.5	356	15	17496		
517	3.60	14.40	1469.57	"	.45	41.5	189	7	"		
704	7.54	18.94	1488.51	"	0.75	51.8	279	7	"	—	
802	5.44	22.47	1510.98	"	0.70	43.2	341	5	"	1327	
329	4.01	9.24	1520.22	"	0.45	38.9	146	2	"	1327	beams dumped
863	7.15	24.35	1544.57	"	0.75	31.7	353	11	17.495	1327	
743	5.70	20.97	1565.54	"	0.55	14.8	294	8	"	1327	
377	4.25	10.64	1576.18	"	0.45	11.5	144	3	"	"	beams dumped
4	?	0.	1576.18	"	0.75	?	0	0	"	—	Beams lost
793	7.54	22.51	1598.69	"	0.70	46.7	329	11	17.496	1328	
765	5.84	21.66	1620.35	"	0.56	44.1	286	7	"	1327.5	
366	4.59	10.38	1630.73	"	0.40	42.9	130	6	"	1327	Beams dumped
651	6.25	18.33	1649.06	"	0.68	45.9	261	10	17.495	1324	~~Beams lost~~
736	6.76	20.49	1669.55	"	0.94	45.0	302	7	—"—	1324	
418	4.04	11.87	1681.42	"	0.59	41.6	113	7	17.496	1323	~~beams lost~~
	2.96	0.09	1681.51	"	–	–	3	0	"	—	very short run, beams lost
959	7.21	26.89	1708.40	FI 133	0.454	38.5	355	8	"	1325	IBM was down at start
247	5.69	6.96	1715.36	IBM	0.45	38	111	3	"	–	short LUMI - beams dumped
631	5.36	17.77	1733.13	IBM	?	43.9	268	7	"	1328	
276	4.21	2.77	1740.90	"	0.40	40.8	92	1	"	1328	stopped because of ZDAS errors

18^{55} within RUN 8981

JDAS ERRORS	47	Subcrror 0
	44	203
	53	140204
	47	0
	44	214
	61	077 777

errors were coming in one "bunch".

2 x IBM on-line JOB ERROR CHECK 2 (= bad bunch)
and on Colour TV: Bad event structure, faulty part 57
and on printer ERROR 37; IOX ERROR . ADDRESS 133176; LEVEL (DEC.) : 8

19^{15} Stop for refill

20:09 New fill Start run 8982 BP ~ 0.7

JDAS errors	44	707
	51	0
	44	203
	51	0
	47	0
	44	203

20:10 ID trip.
20:20 ID trip.
20:31 ID trip e$^+$ current dropping quite fast.
20:36 ID trip
21:29 Start run 8982. HV error MFR 61 (tagging) channels 5,6,7. ~0 Volts.
can reset by 6 and 7, but not 5. Wriedt will come in sometime this evening.
22:07 YSPY complains forward TOF no hits 30,31. Histogram shows channels 30,31 no lower than normal.
— clears itself on next YSPY scan.
23:05 TASSO suggest new fill at 23:30. We agree
On selecting 'next event' in event display get an unstoppable stream of messages on 4014.
'non-increasing wire number 1074 332 280 516' they just keep pouring out, no matter
what we do! continue data-taking until refill.
23:30 Stop run 8984. Dump beams.
Re-load JDAS — messages on 4014 stop.
Hole in JET-chamber wire-map — perhaps cause of above error. H. Rieseberg investigating.
From the end of Run # 8982 to the end of Run # 8984 wires # 256 to 279 are missing
No YSPY Message! DL8 #32 or 31 is faulty

29.10.81 THURSDAY.

0:00 Peter Warming & Fred Loebinger.
0:05 Exchanged 1 quad in tagging HV-power supply, MFR 61 (channels 4-7) HW
0:34 Beams for 1 minute then lost. | H. Rieseberg replaces DL8 32
Run summary is almost empty - why?
2:10 new fill ready
2:15 check of ID wire-map: the hole at wires # 256 to 279 is gone!
5:15 Beams dumped.

8:00 Wriedt + Minowa
9:16 Beams partially lost, ID-trip; PKR wants to dump the remained beams.
JDAS error 61 subcrr 312 → spark 9-17R1 Rieseberg is here.
9:35 "Short break" appears on TV-screen
~ 10:30 Morning TASSO we get the information that PKR estimated the break to last for about 30 min (at 9:35) and now estimates another 15 min. We decide not to turn down the magnet
11:30 Luke (TASSO) informs us that PKR gets one problem after the other: break will probably last for another hour → turn down magnet to 4000 A.
12:24 New fill ready
raise the ~~mag~~ magnet to 7500 A
ID has been switched on successfully by Wagner.
12:36 Run 8990: IBM Transfer ERROR (OCT): 54 Subcrr 140000 Error Count 5
12:40 ID-trip; burnt current + spark in Ring 1/1
12:50 Continue running; background still high: 0.80 - 0.85; high dead-time: ~ 18%
currents: I^-: 8 mA, I^+: 7.3 mA
PKR still optimising beams
13:00 PKR has finished optimization; currents: I^-: 7.7 mA, I^+: 7.5 mA; background: ~ 0.70 - 0.75;
dead-time: ~ 13%
13:40 JDAS ERROR 46 Subcrr 1 Task 1
14:14 ID-trip; ~ 1 mA e$^+$ lost
14:49 ID-trip; stopped Run afterwards because PKR intends to test some features for PLUTO - Quadrupoles and
dump the beams afterwards.
14:55 PKR cannot do this test due to some problems. We start new run
14:58 Beams lost, ID-trip.
15^{00} Cache Limits Register extended to 250 - 277; SEG 70: 250 - 277 D.C.
15:45 New set (Nr. 4) of tagging-system EHT's installed. HW

16.00 Bowden & Heidt on shift
18.00 IBM down
18.40 Start run 8993 on tape F11 133 IBM still down
20.05 TASSO phone to ask about a new fill. Apparently PKR believe they can inject smoothly now. (I'm sceptical about your spelling! — (am skeptical about this!)) We say yes and hope for the best.
21.35 PKR still cannot fill the machine and now an hour has elapsed since dumping the beams.
22.54 BP #16 found to be giving 1.3 V on its own. ⇒ We are left with 0.7 V so we can start. (removed)

0:00 Clarke & Eloen on shift
Get frequent error messages with sequence 51
1326
sometimes followed by 44 203
0:45 After another one of these errors ERROR 37 10X ERROR
ADDRESS 50405 . . . .
is printed on L-P again and again.
Restart NORD. Since TV screen does not come up, we stop run 8997 and begin again.
0:55 Start run 8998. Soon get error 44 707.
1:25 TASSO announces new fill for 1:45.
1:30 Beams lost.
2.17 Start run 8999
2.40 Above error messages re-occur in profusion.
In the end DL8 fake interrupts (error 51 (what does 1826 mean?)) are followed by TIME OUTS on 707. Start wiggling and knocking on crate 707. Result: TIME OUT on 706. Same treatment on that crate + fixing the screw of its controller seems to cure the problem.
6:15 Second anode current alarm in 5 minutes. Phone PKR. They try to optimize. - We had a NORD hang-up in the meantime. Run summary for run 9002 missing. Start run 9004.

08⁰⁰ McCann & Petersen on shift.
08⁰³ Beams lost.
10³¹ new filling
19⁰⁰ 2x false interrupt from a DL8
Runs 9005, 9006, 9007 end with N50 rejection and cosmic rejection!
They are hopefully defunkt by shorting the Vand ← no. Someone must have switched it on

16.00 Wrodt & Hardt on shift
17.10 Filling ready
17.15 Start run, pause after 114 ~~run~~ triggers because of unusual behaviour of chamber-current (visible on scope). Signal (noise, pick-up?) remains after switching-off of chamber. Maintenance investigates.
Anodenstrom Multiplexer wackelkontakt an Stecker Add #3780 ~ 3781 beseitigt
17.20 Continue run 9008
When trying to start YHMON on console-screen appears: "YHMON: There are NO booked Histograms !!"
Ralph Eichler is coming. Re-allocates histograms. (Before this run the NORD-programs had been reloaded.)
17.50 Stop run: ~~the Z-Vertex bit in MIPRC was wrong (= 1000 nun).~~
Z-Vertex-Rejection was switched off. (in Run 9008)
18.29 IDAS-Error 44 Suberror 703 Task 1 : time out
18.43 " " 44 " 707 " 1 " "
20:51 ID-trip (due to partial beam-loss)
22:47 IDAS Error 44, Subror 707 Task 1
" - 51, " 707 " 1
" " 44 " 203 " 1
IBM Online-Job Error Check 2
22:50 ID-trip
23:10 —"—
23:26 IDAS Error 44, Subror 707, Task 1 3×
" - 51, " 707, " 1 usw...
~ stop Run 9011, start new one
in addition:
IDAS Error 44, Subror 214, Task 1
Phoned Ralph Eichler; according to his advice we switched off TOP & BP - klippers: no success
Exchange of Crate-Controller & LAM-Grader in Crate 7, Branch 7 had no success either.
Next shift phones Nozaki
Runs 9012 — 9015 are junk

Run	Date	Start	Stop	I^+	I^-	Dead time (%)	Time (secs)	Records out	All triggers ×10⁶	T0 reject ×10⁶	T0 accept ×10⁶	T1 accept + positrons ×10⁶	T2 accept	T3 accept	T2 stof str	T2 cellin	T2 ≥2 ztof ≥2,1 ≥2 ztr	T1 LG 24
8997	30-10-8	0:50	0:54	5.0	6.0	36.1	89	120	55	31	24	0.3	116	15	0	73	17	40
8998	"	0:56	1:21	4.6	5.6	10.0	1216	1602	388	38.8	349	5.6	1692	176	-	1210	257	557
8999	"	2:18	2:40	7.7	8.3	12.3	1031	2351	332	40.9	291	58	2342	281	-	1298	493	829
9000	"	2.41	4.16	5.4	6.2	10.2	4147	8002	1430	151	1329	19.6	8086	890	-	4488	1119	2918
9001	"	4:16	5:02	4.8	5.5	6.0	2217	2995	675	40.4	635	6.7	3180	252		2189	536	1083
9002	"	5:25	6:10					2077										
9003	"	6:18	7.49	5.3	6.0	8.3	4571	8002	1398	115	1283	19.6	8494	857	-		1145	2925
9004	"	7:49	8:04	5.6	5.7	7.2	667	1084	205	14.8	190	2.2	1035	83	-	740	199	399
9005	"	10:40	11:37	7.0	7.5	11.0	2442	5033	780	86	694	13.1	6081	595	-	3083	1579	1803
9006	"	11:38	13:12	5.7	5.6	8.4	4742	7716	1462	122	1339	17,8	8469	774	-	5176	1888	2906
9007	"	13:13	16:01	4.8	4.9	6.0	2438	3267	745	65	700	6.9	3418	291	-	2336	618	1249
9008	"	17.15	17:43	8.0	7.5	11.2	1261	3762	399	45	355	6.5	2823	301	-	1311	637	969
9009	"	17:53	19:32	6.1	5.6	7.7	4962	8002	1540	119	1421	18,8	8958	858	-	5522	1728	2763
9010	"	19:32	20:58	3.3	3.8	6.1	4343	5919	1313	80	1233	12.2	6159	592	-	4224	1084	2088
9011	"	22:47	23:30	8.0	7.4	11.1	1328	4080	584	64.7	520	10.2	4238	479	-	2421	720	1378
9016	31/10/81	1:12	2:30	4.9	4.4	6.0	3980	5364	1206	72.3	1134	11.3	5864	474	-	3946	1171	1923
9017	"	3:14	4:20	4.6	4.8	8.4	3132	5639	976	82.0	894	11.6	6132	529	-	3300	1780	2004
9018	"	5:02	6:19	6.6	6.9	10.4	3780	8002	1203	125	1077	18.4	9427	837	-	4496	3100	2790
9019	"	6:20	6:30			8.9	452	1018	146	12.9	133	1.98	994	91	-	558	322	342
9020	"	9^{38}	9^{44}	7.8	8.3	16.4	251	730	80.4	13.2	67.2	1.25	760	54	-	308	323	226
9021	"	9^{45}	10^{27}	6.7	7.2	12.2	1868	4534	641	78	563	3.46	4628	420	-	2347	1440	1773
9022	"	10^{29}	12^{02}	5.1	5.5	7.9	4697	8002	1448	113	1334	17.6	8470	766	-	5005	2045	3066
9023	"	12^{02}	12^{17}	4.3	5.3	6.5	738	1114	219	14,1	205	2,15	1086	98	-	725	193	417
9024	"	13^{11}	14^{24}	6.3	6.4	13.6	3196	8002	1043.6	135,5	908,2	20.1	9178	993	-	4077	7845	7895
9025	"	14^{24}	15^{06}	5.1	5.1	13.5	1466	3487	476	64	411	8.81	4343	572	-	1829	1396	1232
9026	1/11/81	3:48	4.38	6.2	5.9	9.2	2233	4126	533.5	50	484.5	6.3	4787	350	-	2383	1768	1519
9027	Doesn't exist																	
9028	"	4.58	6.03	5.1	4.9	6.5	3361	4638	1006.8	65.7	941.7	9.7	5327	392	-	3706	1488	1692
9029	"	6:43	8:04	6.8	6.2	10.6	3668	8002	1168.4	123.7	1044.7	18.2	9432	838	-	4409	3138	2829
9030	"	8:05	9:39	5.2	4.7	8.0	4749	8002	1468.9	117.6	1351.3	17.0	9306	665	-	4941	2996	3001
9031	"	9:40	9:47	5.1	4.6	18.6	318	462	110.96	20.6	90.4	0,9	516	41	-	301	140	169
9032	"	10:41	11.39	7.1	7.5	15,2	2739	8002	904.6	137,3	767,3	17,2	10187	865	-	3545	4586	2974
9033	"	11:39	12:58	5.7	5.8	9.5	3873	8002	1917	116.2	1100.8	17,9	8504	683	-	4479	2386	3150
9034	"	12.58	13.24	5.2	5.3	12.3	1081	2020	349	43	306.5	5,0	2149	221	-	1245	575	758
9035	"																	

Lumi	$\int L\,dt$ ×10³⁰	$\int L\,dt$ Run	$\int L\,dt$	IBM / Tape	Scan type (U)	Reject event fraction (%)	# BHABHA	# multi hadron	Beam energy (GeV)	TDC 85	
"	3.61	0.32	1741.22	IBM	"	34.8	7	-	17.495		Stopped because of missing TV-picture
152	3.56	4.38	1745.55	IBM		38.8	63	0	"	1328	Beams lost
214	7.42	7.65	1753.20	"	0.60	38.7	120	3	"		stopped after many old false interrupts
870	5.28	24.56	1777.76	"	0.55	38.8	359	15	"	1328	
297	3.79	8.40	1786.16	"	0.37	39.4	118	3	"	1328	beams dumped
											HOLD hang-up, run summary lost
812	5.01	22.92	1809.08	"	0.60	40.5	315	18	"	1328	
108	4.19	2.79	1811.87	"	0.5	34.2	44	2	"		Beams lost.
509	6.63	16.19	1828.06		0.65	45.7	217	5	"	1327	} multi HAD rejection
874	5.27	24.99	1853.05	"	0.5	42.5	352	10	"	1327	
317	3.73	9.09	1862.14	"	0.4	40.0	133	3	"	1327	Beams dumped.
316	7.09	8.94	1871.08	"	0.70	47.7	114	6	"	1326	NO z-Vertex - Rejection.
729	4.15	20.58	1891.66	"	0.60	41.3	303	11	"	1327	
601	3.91	16.99	1908.65	"	0.45	38.7	237	14	"	1327,5	Beams dumped
496	7.62	13.93	1922.58	"	0.72	40.3	187	6	"	1328	stopped because of JDAS errors (see p.95)
487	3.46	13.78	1936.36	"	0.3	40.4	212	7	"	1328	Beams dumped.
535	4.85	15.18	1951.54	"	0.55	40.8	218	7	17.496	-	Beams dumped
746	5.60	21.16	1972.70	"	0.65	43.7	269	6	"	1328	
95	5.90	2.67	1975.37	"	0.47	35	55	3	"	1328	Beams lost.
79	8.96	2.25	1977.62	"	0.63	39.3	39	1	"	1327	stopped because of DLP time out
521	7.45	14.67	1992.29	"	0.60	38.8	207	2	"	1327	trigger hang up for unknown reason
834	5.02	23.60	2015.88	"	0.50	40.6	340	11	"	1325	clear shift in between these runs
109	4.18	3.08	2018.97	"	0.40	36.5	41	3	"	1324	
738	6.52	20.84	2039,81	IBM	0.67	43,7	271	8	"	1326	
238	4,50	6.60	2046,41	"	0.52	46.2	85	3	"	1327	
340	4.31	9.67	2056,02	"	0.5	82.7	178	12	17.495	1327,5	
											JDAS errors
382	3.24	10.88	2066.90	"	0.39	42.2	140	3	17.496	"	New filling wanted.
807	6.21	22,80	2089,70	"	0.62	43.9	279	12	"	1328	
683	4.06	19.29	2108,99	"	0.35	42.8	275	5		1327	
31	2,81	0,89	2109,88	"		40,2	17	0	"	1327	No events for ~30 sec why? Reason is not clear
691	7,03	19,25	2129.13	"	0,7	47.1	257	6	17,495	1326,5	
763	5,57	21,59	2150,72	"	0,5	40,5	280	11	"	1325	
166	4,32	4,67	2155,39	"	0,45	39.9	69	0	"	1324	
								1619			Junk, no counts

31-OCT-'81

0:00 Bowdery and Odaka on shift.

ID-crate TØT is still in trouble. We called Mr. Nozaki.

1:10 The ID-crate was successfully fixed with reconnecting the cable between a crate controler and a LAM grader.
:38 LG-thresholds were adjusted. Noise Level = 40 mV

3:11 Beams are ready.
:30 YSPY error ! Foreward TOF no hit ! 30 & 31 , but there are some hits in NORD-50 histograms.
:35 ID-trip ' Anode Current ' Nearly 1/3 of beams are lost.
4:20 Beams were dumped.
5:00 New beam is ready.
6:30 Beams lost

8^00 Sethka, Felst on shift waiting for a new filling
problems with injection ran magnet down to 4000 A
9^30 filling ready, start run
10^27 no triggers anymore for no obvious reason, stopped run and started new one
and everything seemed to be OK again.
11^40 check of histograms: there is an indication of 2 hole in "Trigger 2 Input" histogram
Why is the distribution of "z-vertex all" and "z-vertex MIPROC" no more different
around z = 0 ?
12^17 Beams dumped for new filling, from 9^30 - 12^17 we accumulated 43.6 nb^-1, things improve!
11^37 BP-current rises to ~1.5 ; Anode-current (ID) also rises ⇒ very high background.
Reason: vacuum problems at Petra. (Lifetime lowers ~ 1.5 hours). Inst. dead time 50%!
At the same time: JDAS ERROR 46 /1
Paused run 9025, switched off ID
14^47 Background o.k. again, continue run.
15^05 stop run for new filling, Piroski is optimizing the machine

16:00 Bartel & McCann on shift the bundesliga shift
16:25 'short break' at Petra ran down magnet to 4000 A.
16:30 'Ausfall Synchrotron'
16:45 Power fluctuations
Chamber alarm, camac error, IOX-error
Restart NORD, switch on several CAMAC-crates
With Eichler's help the NORD is back to normal
17:15 HSV - Bayern M. 4:1 The referee must have been biased ! Definitly AW.
18:55 All IBM computers are down, Petra is down we are waiting
23:22 Still problems with broken power supplies
24:00 We did not manage to log any event on tape in our shift.

1ST NOVEMBER 1981

0^00 Rowe and Takeda on shift

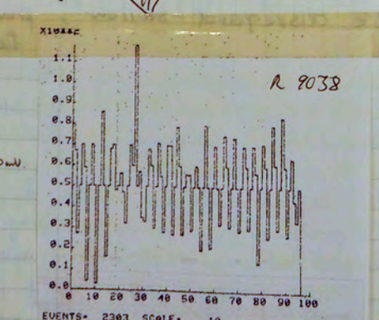
3^15 Beams ready. Magnet to 7500 A
Forward Muon Counter trouble.
Yellow flashing light does not go away even if HV for muon counters is on. "Ready" lamp of LeCroy HV module is off. Usually it is on, I remember. Called Navoska.
According to her suggestions, we tried some possibilities, but in fail.
(i.e. disregard-switch, pulled out lemo cable at LeCroy HV module)
After all, she agreed to come.
⇓
TOF HV was wrong. (Muon counter HV has been OK)
Power was switched off and on. Then OK.

Run 9026 started at 3:48.
Tagging trigger was missing. One NIM crate was down.
Switched off and on again, then OK.
(Up to ~ 900 events, no tag trigger !!)

4^ST JDAS Error 44 Sub. Err 403 millions of times (if not zillions!). We fiddle about a bit. Have to call Bethke in the end. Through some piece of luck the problem righted itself without having to spoil Bethke's beauty sleep too much (up to now!! — the problem is very touchy) -

6[05] Beams dumped. New fill will be attempted.
7[55] Completely buggared.

8[00] Yamada + Olsson on shift
9[15] TASSO called us. "New filling in half an hour.".
Now $I^+ = 5.5$, $I^- = 5.0$ mA. $L = 3 \times 10^{30}$ $L_{sp} = 21.8$
10[35] New filling's ready. B.P. - level 0.75 V $I^+ = 9.45$, $I^- = 9.40$ mA
11[40] JDAS 44 : 703 : 1
13[05] Run 9039, start: at count 163, NO EVENTS ... Pause/continue ⇒ OK again ???
13[07] JDAS error 46 : 1 : 1
13[35] JDAS 44 : 403 very often: DL8 504→ Know LED on. pull out and in again ⇒ OK
14[00] Beams are bad. We see many events from z_v = 350 mm, They cause high dead time of over 30 %. New filling is proposed.
Now the gated Lum 165 10^{30}
14[20] New fill ready!
14[35] JDAS error 44 / 703 / 1.
15[00] " " 44 / 703 / 1.
15[03] " " 44 / 703 / 1.
15[40] missing μ-crate #7 Run # 9038: Reset button worked.
15[45] JDAS error 44 / 203 / 1
IBM on-line-JOB error check 2.
Anode current history looks funny. Constant at .5 for many hrs
Start new run, OK



16:00 Ball, Haidt on shift.
Run 9039 in progress.
JETC anode currents histogram is OK. LG thresholds OK. x=40mV.
16:40 Mark-J request 5 mins access at end of this filling.
- they claim whole operation will take < 10 minutes. We agree.
17:00 TASSO suggest new fill at 17:30. We agree.
17:30 Stop run 9039 for dumping of beams, access + re-fills
18:30 Access indeed only required 5 mins - but since then beams always lost on acceleration.

Histograms for 9039 OK. except. TOF #25 mean ADC = 0.
19:30 Magnet flucts. Reaching new 7485. Reset to 7501 by program.
19:50 New fill ready. Had to reset a 'HV input' alarm on ID which had developed during refilling time. Reset OK. Start run 9040
20:14 ID trip.
21:00 ID trip
Run 9040 ended. Start run 9041
21:20 Notice LG>4 very high (~15,000 for 8000 records out of 3000 normally).
Look at x now = 50mV. Stop run 9041 to ~~readjust~~ readjust thresholds.
Start run 9042. LG>4 rate now OK.
22:16 Stop run 9042 to dump beams.
22:44 Error 40 in 32251 at 2622 Power fail.
Restart NORD. Reload JDAS. All OK, time, but not apparently, with PETRA.

2. Nov. 1981

0[00] Meier, Rosseberg on shift
0.28 PETRA back, Run 9043 started
0.30 ID - Alarm (anode current)
0.35 NORD-10 'hang-up', restarted NORD-10, reloaded JDAS, Run summary lost
0.40 ID - Alarm, we informed PLR about unstable beams
0.47 again ID-Alarm, Run 9044 paused, discussion with PLR without any result, we wait for some minutes to observe the beam
0.48 we observed raising temperatures in the hall and in the control-rooms, the air-conditioning is not working, we phoned K-group
1.24 Suddenly PETRA beams dropped to 1.5 mA → beams dumped, new filling
1.30 Magnet fluctuations
1.50 K-group repaired air-conditioning, a filter was blocked
4.05 JDAS error 44, subError 703
4.08 TASSO suggests a new filling, because we have to switch off our magnets and PETRA at 7.00 h.
4.21 Beams dumped
5.00 New fill ready, start run # 9047
5.04 ID-Alarm
5.05 Magnet fluctuations
6.40 Stop for power saving (first shut down of winter 1981/82)

102 RUN	DATE	START	STOP	I^+	I^-	DEAD TIME (%)	TIME (secs)	RECORDS OUT	ALL TRIGGERS $\times 10^6$	T6 REJECT $\times 10^6$	T6 ACCEPT $\times 10^6$	T1 ACCEPT + POSITRON $\times 10^6$	T2 ACCEPT	T3 ACCEPT	T2 3TOF, 3TR	T2 COLLIN	T2 $\geq$2TOF, LG>1 $\cdot$ $\geq$2TR	T1 LG>4
9036	1.11.81	13:30	14:02	4.1	4.2	19.9	1137	3788	400	79.7	320.3	12.5	5380	726	—	1859	1548	1951
9037	"	14:20	15:36	6.6	6.8	11.5	3408	8002	1090	125.5	964.5	20.0	8681	847	—	6365	2296	3039
9038	"	15:37	16:05	6.0	6.2	9.6	1371	2887	437	42	395	6.5	3056	289	—	1707	798	1092
9039	"	16:05	17:32	4.7	4.9	7.6	4380	7235	1342	102.5	1239	15.9	7738	634	—	4650	1855	2860
9040	"	19:55	21:01	6.1	7.2	14.3	2949	8002	970	138	832	17.6	9798	776	—	3902	3648	15292
9041	"	21:02	21:30	5.6	6.7	10.4	1145	2453	372	38.6	333	5.2	2893 2897	207	—	1291	1065	993
9042		21:30	22:16	4.8	5.8	10.0	2229	4371	706	70.6	636	11.3	5314	435	—	2722	1383	1628
9043	2.11.81	0:28	0:35					447							—			
9044	"	0:41	1:29	8.5	8.6	10.8	1666	3729	543	58.4	484	8.7	4135	376	—	2219	700	2152
9045	"	2:05	3:23	6.0	6.1	10.4	3848	8002	1207	125	1082	18.1	9637	671	—	4600	2666	2947
9046	"	3:23	4:21	5.1	5.2	8.7	2858	4861	896	78.3	818	10.3	5835	414	—	3080	1644	1846
9047	"	5:02	6:15	6.1	7.2	12.8	3250	8002	1048	134	914	18.5	9589	903	—	4079	2895	5605
9048	"	6:16	6:42	5.6	6.7	9.6	1279	2503	402	38.6	363	5.9	2996	266	—	1496	847	920
9049	—	9051	junk	(see p. 104)														
9052	"	14:55	16:12	6.5	6.8	12.4	3429	8002	1112	137.4	975	17.3	10374	767	—	4233	3386	2832
9053	"	16:12	16:49	5.9	6.1	9.5	1681	3391	528	50.1	478	6.9	4025	282	—	1918	1221	1225
9054	"	20:08	21:13	7.8	6.5	14.5	3385	8002	1012	144.4	868	17.9	10567	837	—	4020	3513	2911
9055	"	21:13	22:35	6.3	5.2	11.0	3891	8002	1260	138	1122	17.6	9687	791	—	4417	3182	2927
9056	"	22:35	23:51	5.5	4.5	7.4	2854	4380	872	64.6	808	9.3	5076	389	—	2921	1345	1631
9057	3.11.81	00:18	01:17	7.0	7.4	18.1	2595	8002	894	162	732	17.9	9549	909	—	3737	3222	2426
9058	"	01:18	02:31	5.6	5.9	10.8	3549	8002	1133	122	1011	18.0	9350	832	—	4466	2875	2840
9059	"	2:31	3:02	5.1	5.4	8.5	1364	2490	423	36	387	5.4	2727	236	—	1513	774	934
9060	"	4:00	5:09	6.9	7.1	11.6	3389	8002	1080	125	954	20.2	8968	992	—	4524	2098	2876
9061	"	5:10	6:23	6.9	7.0	11.0		6563										
9062	"	6:32	6:47	5.2	5.3	6.5	774	1148	936	220	15	2.5	1245	106	—	771	261	387
9063	"	11:07	12:12	7.7	8.0	16.0	—	8002	900	144	756	17.3	10742	805	—	4022	3163	3621
9064	"	12:17	12:19	7.5	7.5	13.7	—	173	20	2.7	17.2	0.4	207	18	—	28	64	63
9065	"	12:23	12:43	7.0	7.3	12.9	—	2311	298	38.3	259.4	5.5	2973	235	—	1207	914	810
9066	"	12:43	12:44	6.3	7.3	—	—	25										
9067	"	12:48	12:57	6.7	7.1	12.0	407	1001	132	116	15.9	2.2	1251	97	—	536	399	340
9068	"	12:57	14:20	5.4	5.7	9.8	4177	8002	1295	127	1171	18.1	9822	699	—	1642	2878	3041
9069	"	14:21	16:12	4.1	4.4	6.7	5705	8002	1738	116	1622	16.9	9366	685	—	5546	2257	2997
9070	"	16:13	16:52	3.8	4.0	4.7	2040	2169	609	28.5	581	4.0	2424	178	—	1745	440	812
9071	"	21:31	22:43	7.0	7.0	14.9	2756	8002	915	136	779	17.4	9577	924	—	4057	2948	6410
9072	"	22:44	4/11/81 0:11	5.5	5.5	9.4	4089	8002	1279	120.3	1159	18.70	9119	914	—	4772	2429	2909
9073	4/11/81	0:12	0:20	5.3	5.3	7.8	394	696	121.0	9.453	111.5	1.454	771	63	—	477	172	235

T1 LUMI	$\langle L \rangle$ $*10^{30}$	$\int$Ldt RUN	$\int$Ldt	IBM TAPE	BEAM PIPE (J)	REJECT EVENT FRACTION (%)	# BHABHA	# MULTI-HADRON	BEAM ENERGY (GEV)	TDC 55	
195	2.92	3.32	2455.39 258.71		0.4	50.4	48	1	17.496	1326	
807	6.71	22.85	2181.56	IBM	0.7	41.8	325	12	"	1325	
260	5.38	7.37	2188.93	IBM	0.5	40.2	109	4	"		
614	3.98	17.43	2206.36	IBM	0.45	40.3	246	5	17.495	1324	beams dumped
1574	9.42	27.78	2234.14	"	0.7	45.4	255	7	"	1325	
194	4.80	5.50	2239.60	"	0.45	44.4	86	1	"	1326	stopped to adjust HG thresholds
320	4.04	9.00	2248.60	"	0.45	44.5	115	5	"	1326	beams dumped
				"	0.60				17.496		NORD-10 'hang-up', no Run-summary
433	6.77	11.28	2259.88	"	0.50	42.0	140	4	"	1326	beams dumped (low beam currents)
748	5.44	20.92	2280.80	"	0.65	44.3	273	6	"	1328	
402	3.98	11.39	2292.19	"	0.45	44.2	170	4	"	1328	beams dumped
795	5.82	18.91	2311.10	"	0.7	44.3	264	7	"	1328	
198	4.39	5.62	2316.72	"	0.5	44.3	84	1	"	1328	beams dumped
					0.62				17.495		
636	5.16	17.68	2334.40	"	0.62	46.8	236	8	17.495	1328	
265	4.43	7.45	2341.85	"	0.58	44.6	96	6	17.496	1328	beams dumped for power saving
656	5.90	18.19	2360.34	"	0.69	48.0	263	9	"	1328	
607	4.38	17.05	2377.39	"	0.57	44.3	226	4	17.496	1327	
308	3.05	8.66	2386.05	"	0.41	42.2	118	6	"		
721	8.76	20.14	2406.19	"	0.59	44.7	283	10	"	1327	
700	5.56	19.72	2425.91	"	0.4	43.4	238	5	"	1326	
199	4.12	5.63	2431.54	"	0.35	41.1	80	3	"	1326	Beams dumped
952	6.21	21.01	2452.55	"	0.75	42.7	293	7	"	1326	
	5.08	18.90	2471.45	"	1.52				"	1327	Run summary lost. These are TV nos.
105	3.85	2.98	2474.43	"	0.40	39.2	30	2	"		
642	~4.5	16.36	2490.79	"	0.82	46.8	205	6	17.496	?	
10	?	.28	2491.07	"	.65	42.9	5	0	"	?	
157	—	4.43	2495.50	"	.65	46.5	48	3	"	1326	
				"					"		
68	4.63	1.89	2497.39	FA1137	0.58	44.7	24	0	"		junk, forget it (IBM crash)
554	3.70	15.47	2512.86	IBM	0.57	44.6	224	9	"	1326	run stopped after 14 events to go back to IBM
487	2.39	13.65	2526.51	"	0.43	42.2	181	4	"	1326	
152	2.11	4.31	2530.82	"	0.31	40.6	52	0	17.496	1326	
876	7.35	20.25	2551.07	"	0.76	44.5	235	10	17.509 ~17.505	1327	
631	4.39	17.95	2569.02	"	0.55	42.6	258	3	17.505 ~17.496	1326	
53	3.82	1.51	2570.53	"	0.38	40.1	25	2	17.496	1326	Beams dumped.

6 40 Magnet Current set to 500 A.

8:00 Takeda & Wriedt on shift.
10:00 Petra still down due to vacuum-problems.
10:05 PETRA is switched on again. We raise our magnet current to 5000 A
10:20 Still no indication of injection, PLUTO (coordinating experiment) tells us about vacuum-problems & problems with DORIS ∿ time down our magnet again.
11:00 A new attempt to switch on PETRA.
PLUTO phoned: they started to re-build DORIS but had forgotten to disconnect like DORIS-and the PETRA-interlock (which has been a common one). Now they are doing it (it may take them another hour).
12:55 Still no beams despite "Injecting" on the TV-screen up to now
Now the TV-screen is black. Maybe PLUTO wants to surprise us with a new filling?
13:10 TV-screen back to life; PLUTO pushes PETRA magnets ∿ raise JADE-magnet to 5000 A
13:20 The first positrons appear in PETRA: raise magnet to 7500 A.
14:30 New fill ready
14:35 Can't run: runs 9048–9051 end after the first event with
JDAS error 44, Subertor 116, Task 1.
Dieter Lords is investigating. Last program change today was wrong. Back to old version. RAE
14:55 Start Run 9052
14:58 1D-typ
15:06 —.—
15:49 JDAS Error 44, Subertor 203, Task 1 followed by "bad event structure"

16:00 Glendinning & Eisen on shift
16:45 K-Group asks us to run down magnet in 3 min.
16:57 Magnet at 500 A. Beams have been dumped.
19:57 Injection finished. Beam optimization. (Magnet at 7.5kA since 19:10)
20:08 Start run 9054
21:14 JDAS ERROR 44/604
22:20 After making 2 of the standard histograms we get "no events for ... secs" for no obvious reason. Start display. Pause/Continue and everything is fine!?
Get standard histograms without any further interference with data acquisition.
22:41 JDAS ERROR 44/703

11:05 PLUTO asks for new fill at 11:30. We agree.
23:25 Get 4 JDAS ERRORS 44/703 in short sequence

00:00 TUES. 3/11/81 Mc Cann & Nozaki on shift

00:15 After waiting ~ 10 minutes during "background" optimisation and waiting for BP reading ~2.0 V to go down, find that #16 gives ~ 70% of the current. It's now disconnected from meter.*
00:53 No triggers so seemed. pause, must trigger box restart DB
03:30 *BP #16 re-connected – not noisy now

03:30 One of the lead glass power supplies was not on – due to plug being burned. Plug replaced & all is well. (We'd better have another fill practice soon!)
04:34 JDAS ERROR 44 subError 604 occurs twice.

06:23 No triggers. Tried run reset on trigger box (after pressing PAUSE on NORD terminal) when accidentally pressed F1 instead of F2 to continue. This screwed up the NORD and we had to restart it. So run summary was lost.
8:00 Takeda, Wriedt
11:05 Fill ready, start run 9063
11:08 1D typ (Anode currents)
11:20 Standard histograms checked
11:23 1D typ (Anode currents), backpict is ok
11:25 again; this time backpict. jumps
1) YAXON says now sampling, but DAVE doesn't show any event
2) display not available: says display active; Ree doesn't help! Cards will come
PPT PLUTO claims not to have touched anything;
11:47 Now also Trigger (total) = 0.0, ALL 0.0. ⊛ the other numbers look alright. D.C. is investigating
12:12 Stop Run 9063, reload programs
12:17 Run 9064 very short since YAXON didn't work again.
12:28 Now YAXON looks ok
I had to allocate the 5 histograms again.
For that purpose one has to read top limit, low edge, etc from the histogram #0.
Why is there not 1 sheet with a description?
Why is there not a check with a description?
12:34 I find the cable in the pulse generator at 10 Hz. The notice says, it should be at 1 Hz.
But this doesn't change the rate of the time scaler.

⊛ the time scaler shows crazy values! ~10 × expected value

3/11/81

12:39 I reach Eichler: The cable at 10 Hz has to be at 50 Hz, the cable at 50 Hz has to be in the 1 Hz-output. Now the time is counting correctly.

~~Hadrons low~~

12:47 Start new Run 9066 with correct time.

12:44 Now the IBM is busy. Why can't I have an easy life? ← Easy life? It doesn't exist.
IBM error 53. It's good that D.C. is still here
IBM makes a 10 min lunch break to write on tape FM137

13:45 We ask PLUTO to ask PKR for a new fill soon (present fill already 3 hours old, lumi quite low & beams will be dumped in 3 hours anyway). PLUTO will ask.

13:55 PKR can't fill at the moment, they would need about 1 hour of repair-time. ⇒ We continue with this fill.
There is a faulty cavity 'tuning unit' in the machine

1600 Matsumura + Minowa on shift,

1600 PLUTO (coordinating) call us to say PKR cannot inject beams until 17,00 h due to RF cavity problem. Continue present fill until 17:00 h, then power shut down comes.

1655 energy saving time.
Rundown the magnet to 500 A.

~1910 PETRA injection starts.

1915 raise the magnet to 7500 A. on request of Bartel.

19:34 New section of magnet program installed.
"60"-command modified. For changes exceeding 4000 steps, the power supply will pause at an intermediate current for 100 secs.
For raising the current from ≈0. to 7.5 kA you can now type
60 7500 without giving values in between.
(If you do not want to pause use command: 60-DIRECT)
E. Elsen

21:00 New beams are ready.

2130 Optimization ended
Start run 9071

2140 ID trip

2144 Optimization starts again
Pause the Run 9071

2151 Continue Run 9071.

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0:00 Heidt and Odaka on shift

:20 Beams dumped

1:35 Beams are ready. start Run 9074

:40 ID-trip → "BACKGROUND OPTIMIZATION"

:51 The optimization was finished. restart run 9074.

2:00 ID trip → reset

:10 "

3:05 YSPY error "forward TOF no hit # 14,15"
The number of hits of #14,15 is actually less than the others, but we cannot distinguish if it is a problem or not because of low statistics.

:57 Beams are dumped

4:40 Beams are ready.

6:47 Beams dumped.
The magnet was powered down to 500A. "Energy Saving Time."

8.00 Rowe, Narodka on shift

8.52 From "energy saving" to "Injection", magnet shall at 800 A.

9.20 Magnet run up by Pillat, now at 7500 A.

9.30 Beams lost after HV had just been switched on.

9.55 Short break — temp. gauge malfunction.

11.30 Beams finally, background somewhat high, BP = 0.8V.
Start run 9078.

11.45 Complained to PKR about high background (deadtime = 20%)

12.35 JDAS ERR 44 SUBERR 703, again.

12.40 Everything happens at once:
1) Discover, that TEST BANK IS NOT READ OUT PROPERLY (SINCE WHEN?)
2) Alarm in hall from some water valve. Phone Pillat
3) ID trips
4) Nord halts at level 8, when restarting gives "III Par in UPDAT"
Cannot start run any more, find Eichler.

13.30 OK — D.Cords fixes.

13.40 JDAS ERROR (X2) 44 SUB 703

RUN	DATE	START	STOP	I⁺	I⁻	DEAD TIME (%)	TIME (SECS)	RECORDS OUT	ALL TRIGGERS ×10⁶	TØ REJECT ×10⁶	TØ ACCEPT ×10⁶	T1 ACCEPT + POSTPONE ×10⁶	T2 ACCEPT	T3 ACCEPT	T2 3 ToF 3 TR	T2 COLLIN	T2 ≥2 ToF LG>1 ≥2 TR	T1 LG>4
9074	4/11/81	1:35	2:54	7.2	6.9	13.7	3026	8002	989.1	135.6	853.5	17.96	9558	907	~~4702~~	2685		2792
9075	"	2:55	3:57	6.1	5.8	9.5	3075	6094	967.3	91.79	825.5	13.99	7180	671	—	3711	1898	2190
9076	"	4:40	5:42	7.6	6.9	13.2	2977	8002	974.9	128.8	846.1	18.77	9232	919	—	4148	2514	2835
9077	"	5:43	6:46	6.3	5.6	10.0	3142	6543	985.2	97.15	887.1	14.91	7268	649	—	3817	1915	2464
9078	4/11/81	11.43	12 32	8.4	8.5	16.7	2652	8002	896.9	149.8	747.1	18.35	10981	1058	+	3869 3274		2794
9082	"	13.29	14.29	6.1	6.2	8.5	3045	5451	940.6	79.5	861.1	12.5	5974	589	-	3411	1469	2021
9083																		
9084	"	15:51	16:00	8.9	9.1	17.3	366	1093	127	22.0	105	3.0	1393	137	—	531	344	368
9085	"	16:12	16:47	8.0	8.1	15.1	1635	4671	551	83.1	468	10.6	5662	511	—	2500	1373	1955
9086	5/11/81	0445	0455	7.2	6.8	13.3	468	1114	154	20.5	134	3.1	1581	116		642	401	396
9088	"	0456	504	7.1	6.7	11.6	396	866	128	14.9	113	2.4	1154	97		515	282	311
9089	"	05:43	06:50	6.6	8.0	17.0	2331	6837	785	133	652	17.3	9246	680		3603	2410	3188
9090		14⁰⁰	14:11					53?	Run summary lost!									
9091	5/11/81	15⁴⁸	16⁰⁵	8.66	8.89	16.2	761	2228	256	41.6	214	6.3	2699	379	-	1181	567	726
9092			Run		Summary			Lost										
9093	"	1931	20²³	7.5	8.4	21.6	2165	8002	777	167.6	609.7	22	11595	1304	-	3773	2981	2505
9094	"	20²³	21²⁵	5.7	6.4	15.4	2879	8002	951	146.7	804	22.3	10643	1174	-	4278	2758	2663
9095	"	21²⁵	22⁰²	5.2	5.8	11.1	1814	3826	562	62.6	500	9.45	4825	383	-	2238	1338	1374
9096	"	2238	23⁴⁸	7.4	8.2	14.8	2872	8002	936	138.7	797	21.6	9968	1001	-	4319	2689	3688
9097	"	23⁴⁸	0³⁸	7.4	8.26	11.0	2328	4942	733	80.8	652	13.1	5581	558	-	1011	580	1995
9098	6/11/81	1:08	2:52	4.7	5.3	7.3	5331	7672	1615	117.8	1497	21.68	8940	870	—	5755	1660	2657
9099	"	6:23	6:51	7.9	8.3	12.5	1355	3339	442.9	55.46	387.4	10.87	3671	484	—	1918	799	1132
9100	"	12:31	13:23	6.8	6.0	15.5	2398	0	803.0	124.5	678.5	12.8	8911	515	—	4608	2881	3056
9101		13:24	13:33	6.7	5.8	11.6	451	1153	143.4	16.6	126.8	2.1	1291	73	—	692	394	430
9102	"	13:37	13:53	6.3	5.5	10.2	752	1855	236	24.2	212	2.7	1960	103	—	1148	681	690
9103	"	15:19	16:11	8.6	8.2	21.4	1876	8002	679	145.6	538	16.9	8695	833	-	4036	2422	2860
9104	"	16:12	16:68	5.9	6.3	16.0	1398	4657	474	76.0	398.9	9.8	5082	456	-	2645	1337	1717
9105	"	20:26	21:30	7.8	7.9	17.4	2332	8002	800	139.5	660.8	17.7	9032	773	-	4295	2122	4249
9106	"	21.30	22.40	6.4	6.5	11	3410	8002	1089	118	971	18.2	8762	728		5131	1921	2843
9107	"	22:41	23:32	5.6	5.7	14.2	2438	8002	798	113	685	10.0	4702	4110		3009	852	1479
9108	7/11/81	05⁰⁵	5:25	10.14	10.11	88.3	75	5770	215	180	23.1	0.87	594	5882	-	147	87	393
9109	"	05³⁵	05⁵⁴	8.6	9.2	85.7	146	8002	280	240	40	1.16	790	7950	-	224	114	124
9110	"	05⁵⁶	06¹⁷	8.1	8.6	46.2	662	8002	333	154	179	5.7	3097	5851	-	1153	965	824
9111	"	6:18	7:11	6.9	7.3	18.8	2242	8002	782	147	636	17.1	8200	1704	—	3749	2691	2591
9112		music																

T1 LUMI	<L> ×10³⁰	∫Ldt RUN	∫Ldt	IBM/ TAPE	BEAM PIPE (V)	RESECT EVENT FRACTION (%)	# BHABHA	# MULTI HADRON	BEAM ENERGY (GEV)	TPC Ø5	
668	6.20	18.76	2589.29	IBM	0.8 →0.58	44.5	261	6	17.496	1326	
434	4.00	12.31	2601.60	"	0.5	43.3	149	3	"	1326	Beams dumped.
748	7.16	21.32	2622.92	"	0.8 →0.6	43.5	271	11	"	—	
606	5.45	17.13	2640.05	"	0.55	42.1	235	9	"	1326	
631	6.63	17.58	2657.63	"	1.0	49.5	264	5	17.509		Beams Lost. "immediately" — ie the first 9078 was not counted.
450	4.19	12.75	2670.38	"	0.68	40.9	163	12	17.500	1327	
					.7					1327	forget it
84	6.30	2.31	2672.69	"	.8	46.2	39	0	17.509		
425	7.13	11.64	2684.33	"	.7	45.0	147	1	—"—	1326.5	Beams dumped. energy saving
61	3.67	1.72	2686.05	IBM	0.8	49.4	21	2	"	—	stopped to sort out run num confusion
48	3.45	1.37	2687.42	IBM	0.7	47.5	13	0	"	—	beams dumped.
448	5.19	12.10	2699.52	IBM	0.85	47.9	174	1	17.511	1327	beams dumped.
182	6.58	5.01	2704.53	"	0.75	45.1	68	5	17.509	—	
480	6.27	13.58	2718.11	"	0,9	51.2	148	9	17.509	1329	
479	4.65	13.38	2731.49	"	0.8	47.9	171	6	17.509	1328	
237	3.73	6.77	2738.26	"	0.55	45.6	78	2	17.509	1328	BEAMS DUMPED
553	5.82	16.70	2754.96	"	0.78	46.0	275	7	17.509	1328	
353	4.28	8.97	2763.93	"	0.62	44.8	134	7	17.509	1328	
566	2.99	15.96	2780.89	"	0.52 →0.48	42.8	223	4	17.496	1327	Beams dumped.
333	6.90	9.34	2790.23	"		42.6	143	5	17.509	1328	
406	4.78	11.47	2801.70	"	0.5	100	159	7	17.509	~~1328~~ unknown	100% rejection. But IBM scaler reached 8000
65	3.98	1.79	2803.49		0.5	39.9	25	0	17.496	1327	stopped.
111	4.17	3.14	2806.63 ~~8792337~~	"		37.1	46	1	17.496		Beam lost
594	8.84	16.58	2823.21	"	0.72	40.4	216	7	17.509	1328	
321	6.43	8.98	2832.19	"	0.7	40.0	140	7	17.500		Beams dumped; power saving.
770	8.34	19.45	2851.64	"	0.72	42.2	276	6	17.509		
678	5.58	19.03	2870.67	"	0.45	40.2	275	9	17.509	1327	
355	4.08	9.95	2880.62	"	0.32	26.5	137	5	17.509	1328	Beams dumped
7	13.82	1.04	2881.66	"	0.80	6.8	8	0	17.509	1328	
35	7.59	1.18	2882.84	"	0.69	6.4	17	0	"	1328	
145	6.25	4.13	2886.97	"	0.58	20.7	66	1	"	1328	
450	5.58	12.53	2899.50	"		38.9	185	6	17.496		beam lost

15.20 New beams ready, nice background
15.22 Switch off HV : PKR had filled the neighborbunches => 40 Lumi
(Phase jump during injection)
15:23 Beams dumped while chamber HV is turning down => anode current alarm
I complain at PKR!
15:50 This time the filling seems ok
Run 9084 paused after ~ 1000 events : PKR starts optimizing beams on TASSO's request
16:00 Steffen, Ulrich
Now our background is worse, so we complain
16:10 Our background has become lower now: 0.7 V (whereas PKR states that their instrument shows 0.4 V without any attenuators!), continue Run 9084. Receive lots of time-outs => stop run, start new one, everything seems to work after having reset μ-crate #9.
16:25 Standard histograms look ok.
16:45 Stop run, switch off HV, run down magnet
* Water alarm in Jade-Hall, inform MKK (Bastle).
19:05 New fill ready, raise magnet
19:25 Although PKR tried to optimize background, it is still ~ 0.9 V (currents ~ 3 mA each). They claim they can't improve it for us because then all other experiments get worse conditions.
19:50 Another 25 minutes of background optimization results in a background of ~ 1.2 V (not due to a single channel, has been checked).
↳ Led disappeared when the magnet was down: ~~the~~ the valve is whistling again!
20:00 After another complaint at PKR the background immediately improves (~ 0.75 V), currents ~ 8 mA each.
20:10 ! Magnet people state that valve-whistling is not dangerous, but tomorrow Dillet and Hellmann should be informed!

5/11/81
19-24h many problems with Camac, Disk. Replace DMA-unit. Copy backup disk from 21.10.81 Update files from 30.10.81 from tape. Need to compile and reload some programs, but we will do it in next breaks tomorrow. D.C. + RAE
24 - 4 Still many problems with Camac/Nord system. Finally change RTX-unit. Now the disks is not overwritten any more, no memory errors, but still errors in tagging adc + test bank. Problem with tagging LG readout was due to faulty tagging chamber readout electronics which was still sitting in the Camac crate.
4 - 4:30 Now we have problems with test-adcs bank: DMA timeout 44 00. This error is not present on old backup system. We therefore regenerate system on latest version disk (the system from yesterday morning.

short runs, ~~no 9086~~ to ~~and~~ 9088 are nonsense; unfortunately we got a duplicate run 9086
4:44 Start data taking
04:50 Bolt, Bethke finally take over from experts RAE + DC.
We are now in run 9088
05:02 Stop run 9088 to dump beams + re-fill. Energy saving break in 2 hours, so better to have new fill now if possible.
05:42 New fill ready. Start run 9089.
05:43 ID trip.
05:45 ID trip. Request further optimisation. PKR will try, but are not hopeful.
05:52 Try again.
06:09 ID trip. Wait a little before starting again.
06:14 Running again.
06:49 Stop run 9089 to dump beam for energy saving.
Magnet current → 500 A

5.11.81 / 8^{00} A. Petersen + A. Wagner
9^{19} short break (defective power-supply in ring-magnet system)
11^{56} very effective power saving: still no beams - "short" break until ~14^{h}.
13^{44} magnet current → 7500 A new filling
problems with timeout 44 501 All crates in branch 5 show inhibit light
Wackelkontakt in branch coupler
14^{12} beams lost
15^{40} new filling
TOAS ERROR 44 703
44 000
44 201
45 1
44 501
ID TRIPPED TWICE ON ANODE CURRENT THEN WE LOST BEAM.
16^{00} HEDGECOCK & OLLSON ON SHIFT.
16^{20} PKR HAVE AN UNDISCLOSED PROBLEM SO MAGNET RUN DOWN TO 500 A.
19^{10} Beams again
19^{10} MAGNET TO 7500 A
19^{30} After some problem we send data to IBM

Dual Progr. Delay in TOF crate caused trouble therefore taken out. D.C.
Also change crate controller crate 7 branch 7. Bit 3 was broken RAE

6.11.81

0⁰⁰ Odaka & Warming on shift

0³⁷ no triggers any more: found 3 LG HV-supplies down, reason was no power on 4 sockets of a socket board (I guess one out of three fuses is broken), we plug the cable into other sockets

1⁰⁵ check HV and start new run

1³⁰ BP rate meter shows 0V Volts, we don't believe it, but we can't find, what's wrong because ~~the~~ and histograms look ok.

1³⁵ YSPY thinks, channels 14 and 15 in FORW MUON HIT MAP are too low. We think it might be alright

CHECK BP HV: almost all values are wrong: -1.18 instead of -1.65 kV

1⁴⁵ we find that the BP-HV-distribution box has got the overcurrent alarm lamps on
we decide to look into the problem during the next refill

2⁰⁰ we redecide and try to set HV to disk values ⟶ alas! that works, BP rate now normal again: 0.5
we guess that the registers for the HV values were affected by the above power failure

2:53 Beams dumped.

3:25 "SHORT BREAK" due to a trouble in DESY.

6:10 new fill ready, but bad background

:37 LG thresholds were adjusted. Noise Level = 4 ~~kV~~

:50 Beams are dumped. The magnet current was run down to 500A.
"Energy Saving Time"

8:00 Glendinning & Yamada on shift.

8⁵⁰ I phone Mr. Schalt. The hall temperature was again too high. 29°C on the Rucksack and 34°C behind the V34 racks (30°C normal). He will do something about it. Rg

10⁵⁰ TV screens shows [Restart: CA 10:45]
" New "Achtung PETRA wird eingeschaltet."

12:30 Luminosity run. Magnet up to 7500A. Start run 9100.

12:45 YSPY ~~err~~ found an error. "Forward TOF not hit 30 31"
The error ~~message~~ disappeared after a few minutes before we find what was wrong.

13:10 JDAS error 44/703/1

13:15 Jet ch. Anode current histogram has many channels at 0.t as shown in p.100.
see. STD. histogram of Run 9100. → Run 9103 is OK.

13:30 100% Rejection for the Run 9100. Why???
Run 9101 was stopped manually. the summary for (9101)

13:55 Beams lost. ID trip. End of Run 9102.

15:10 New fill is ready Beam currents over 10mA. integrated lum. ≈ 10 x 10³⁰
But dead time ~~20%~~ 20~30%

15:25 ID trip.

15:28 ID trip.

15:33 restart: A little pause for the ID. We don't want the third "trip".
B.P. current ∝ (≈0.7V)

16.00 Hughes ~~Bowling~~ & Haidt on shift

16.11 End Run # 9103

16.11 Start " # 9103 YUMON started at 16.18.

16.40 JDAS error 61 interrr 312 + ID trip

16.48. End run HV off. Pulse Magnet down

20.06 Start run 9105

20:34 ID trip, followed 2 min late by ID Trip

20:35 JDAS ERROR 44/703 Task 1 3 times in succession

20:35 ID Trip.

21:15 JDAS ERROR 61/312, 46/1 Plessey Miproc + AC3099 BP

21:30 Run # 9105 Ended.

23:15 Pluto have requested a new filling for ≈ 23.30.
Run #9107 has to postpone ~ 10x T2 accept, as normal runs these too are equal.
Its results in T3 accept being about ten times bigger than normal.
Most of the excess triggers are labelled "halo" by the NORD50. All other rates per ns⁻¹ seem about normal.

00⁰⁰ MATSUMURA & HEDGECOCK ON THE "GRAVEYARD" SHIFT.
RE:- Run 9107. Jam trigger bits and fwd muon histograms. there appears to have been excessive contribution due to T3 Trigger. We will make a check after the new filling is ready.

03⁰⁰ After a long period trying to inject, KURZE UNTERBRECHUNG appears. Injection trouble diagnosed. Run magnet to 500A.

04²⁰ INJECTION STARTED - Magnet to 7500.

05⁰⁰ Beams back and BP seems stable. Start run 9108!
ID Tripped.

7.10 Beam Int N 10 down New Load
The fault listed by previous shift (ie. T3 accept being excessive.) persisted & have removed the FWD MUON COUNTER cables 6; 7; 8; from the T3 trigger system. The counting rate now looks more normal but there appears to be high counts on all the counters at that side. ~~(illegible)~~

RUN	DATE	START	STOP	I⁺	I⁻	DEAD TIME (%)	TIME (SECS)	RECORD OUT	ALL TRIGGERS x10⁶	TØ REJECT x10⁶	TØ ACCEPT x10⁶	T4 ACCEPT + TOSTPONE x10⁶	T2 ACCEPT	T3 ACCEPT	T2 3TOF 3TR.	T2 (COLLTN)	T2 ≥2TOL LO>1 ≥2TR.	T4 LG>4
9113	7/11/81	9:09	10:21	8.3	7.8	13.7	2970	8002	962.4	131.5	830.9	19.3	9135	799	0	4392	2759	2894
9114	"	10:21	11:47	6.2	5.8	9.0	4304	8002	1336.1	170.0	1216.1	16.4	8709	6084	—	4838	2540	3065
9115	"	11:48	12:48	5.7	5.4	22.7	1295	~~8002~~	479.1	105.4 ~~180.~~	368.7	3.9	2270	6096	—	1356	518	747
9116	"	12:49	12:26			35%	310	3895	1423	50.4	89.9	0.98	309	3351		327	149	167
9117	"	13:23	13:29	9.2	9.9	73.7	63	2291	85.1	62.7	22.4	0.53	365	2031	—	129	80	78
9118	"	13:33	13:55	8.5	9.2	48.0	637	0	740.2	163.3	176.9	3.8	2035	6521	—	812	585	512
9119	"	13:56	15:20	6.6	7.2	12.7	3248	9568	1030	131	898.9	18.8	9014	878	—	4258	2634	2681
9120	"	16:35	17:37	8.1	8.0	15.9	2746	8002	918	146	772	21.8	8720	13872	—	4008	2389	2701
9121	"	17:38	19:01	6.4	6.3	9.3	4457	8002	1304	121	1183	21.3	8930	7526	—	5257	2047	2912
9122	"	19:02	19:33	5.9	5.8	7.2	1586	2374	477	34.1	443	5.8	2590	191	—	1678	526	875
9123	"	21:23	22:22	7.5	8.3	17.2	3268	8002	850	146	704	21.8	8676	1655 1707	—	3967	2285	2597
9124	"	22:22	23:29	6.3	7.0	15.0	3987	7985	1037	156	881	26.1	9465	~~1337~~	—	4275	2216	2553
9125	8/11/81	1:40	3:04	7.7	7.7	14.0	3917	8002	1019	143	876	25.3	9806	657	—	4882	2325	2855
9126	"	3:08	4:33	6.1	6.2	9.6	5313	8002	1383	132	1251	25.5	9731	600	—	5562	2150	2981
9127	"	4:33	4:44	6.0	6.0	8.1	626	777	163	13	150	2.5	933	53	—	568	199	275
9128	"	7:52	9:30	4.8	6.7	14.6	3128	6227	814	119	695	18.2	7564	450	—	3612	1907	2116
9129	"	12 [illegible]	13:49	7.5	7.41	10.6	3692	8002	961	102	859	12.5	5729	3322	—	3319	1289	2207
9130	"	13:50	14:14	4.1	5.7	12.4	426	1326	111	13.8	97	0.1	477	898	—	321	82	147
9131	9/11/81	0.04	0:47	8.0	8.6	16.1	2463	5500	635	102	533	17.5	7321	419	—	3202	2050	1955
9132		NO	output	DUE	TO	NO TRIGGERS												
9133		"	"	"	"	"	"	"										
↓																		
9136		"	"	"	"	"	"	"										
9137	"	6:01	6:47	6.0	6.4	8.1	2763	3833	719	579	661	11.4	4352	302	—	2741	850	1380
						Rescale Slot to use new Constant 1.15 10^{25} E²												
9138	"	11:05	12:17	7.6	7.6	13.7	4053	8002	1054.	140.8	909.7	24.2	9321	~~8964~~	—	4657	2256	2820
9139	"	12:17	13:29	6.1	6.3	10.2	4303	7727	1120	114	1006.2	17.4	7091	1983	—	4187	1618	2299
9140	"	13:36	14:06	5.6	5.7	6.9	3491	3133	453	31.2	422	5.4	2320	128		1487	483	797
1941	"	19:22	19:49	9.1	7.5	1.8	617	1291	161	22.3	158	3.1	1471	63	—	743	391	444
1942	"	19:55	21:41	5.8	4.8	7.4	6143	8002	1579	118	1481	19.8	9248	415	—	5685	1917	2964
1943	"	21:41	21:43				64	103										
9144	10/11/81	0:05	1:04	8.2	8.7	18.0	3521	8002	917	165	752	28	11060	724	—	4534	3079	2879
9145	"	1:05	2:26	6.4	6.9	10.9	4697	8002	1222	132	1089	24.6	9811	563		5080	2661	3028
9146	"	2:26	3:07	5.8	6.2	8.4	2446	3392	637	53.8	583	9.9	4158	232	—	2411	1051	1273

T4 LUMI	<L> x10³⁰	Slot RUN	Slot	IBM/ TAPE	BEAM PIPE (D)	REJECT EVENT FRACTN (%)	# BHABHA	# MULTI HADRON	BEAM ENERGY (GEV)	TDC, 85	
772	7.26	21.56	2921.01	IBM	0.6	43.1	293	7	17.495	1329	
823	5.34	22.99	~~3444.05~~	"	0.4	40.7	320	10	17.495	1328	
191	4.42	5.27	2949.32	"	0.83	15.4	74	4	"	1327	} no ~~run summary~~ printed (Gold "input") Beam dumped
40	8.58	0.18	2949.50	"	0	10.3	15	1	"	—	
20	8.76	0.55	2950.05	"	0.62	9.3	6	0	17.509	?	very bad background, T2 trigger!
133	5.95	3.69	2953.74	"	0.7	14.9	62	3	"	?	
632	5.41	17.52	2971.26	"	0.6	44.3	249	2	17.496	1328	Beam ~~lost~~ dumped
780	7.95	21.82	3993.08	"	0.7	42.0	302	10	17.509	1328	Forward μ ctrs 6,7,8 unplugged early in run
847	5.71	23.73	3016.81	"	0.5	41.5	338	15	17.500	—	Forward μ's replaced 2 ½ way thru run
247	4.38	6.94	3023.75	"	.44	41.0	92	2	17.500	1328	Beams dumped
643	5.45	17.82	3041.57	"	.8	42.7	247	11	17.509	1328	
489	3.37	13.43	3055.00	"	.75	45.0	172	3	"	1327	Forward μs 6-8 removed again high dead time
739	5.20	20.37	3075.37	"	0.80	44.9	294	7	"	1328	
688	3.61	19.18	3094.55	"	0.60	44.2	275	7	"	1327	
67	3.04	7.90	3096.45	"	0.46	43.2	24	1	"	1326	
574	5.13	16.04	3112.49	"	0.80	44.3	221	3	17.495	1328	Beams dumped
528	3.72	13.72	3136.22	"	0.68	31.5	192	4	17.495	1328	Forward μ ctrs 6,7,8 removed. ~~Gold~~ Removed!!!
42	2.67	1.14	3137.36	"		17.2	27	0	17.496	1328	Beams dumped
460	5.18	12.65	350.01	"	0.75	47.4	169	7	17.509	1329	JDAS ERRORS APPEAR. NO TRIGGERS
					0.60						CAMAC CRATE CONTROLER PROBLEM
					0.60						
362	~~5.67~~ 5.57	10.13	3160.14	"	0.42	41.5	115	4	"	1329	Beams dumped for energy swing
			3634.16								Lumi Constant Adjusted.
817	6.48	26.26	3660.42	"	0.43	44.1	330	9	17.509	1328	
642	5.06	21.76	3681.18	"	0.2	37.4	263	3	17.500		
217	4.00	6.96	3688.14	"	0.3	40.0	89	1	17.500		
132	6.02	4.19	3692.33	"	0.4	41.7	45	1	17.506		run stopped because of too many JDAS errors 60
820	4.28	26.80	3718.63	"	0.33	42.2	278	10	"	1328	
				"	8.7				"		Beams dumped
730	6.58	23.16	3741.79	IBM	0.6	49.3	280	10	17.518		
783	5.35	15.12	3756.91	"	0.5	45.1	318	7	17.504		
332	4.37	10.69	3767.70	"	8.3	44.8	116	4	17.504		Beams dumped

7/11/81

0800 ZWANG + Bethke on shift

09:08 New beam ready, started run 9113 ; BP-current ≈ 0.6V

09:17 Dead time ≈ 14%--15%. ~~Oliver~~ Histo's (Trigger-bit) quite normal, Fwd-counter little too much bits around channel # 10. (See remarks from this night!!)
We plugged in again cable 6 of fwd muon counter (T3 trig) dead time then → 15% (ist)

09:20 " " " " " 7 " " " " " " " → ≈14% • we increase T3 in trigger bits

09:23 " " " " " 8 " " " " " " " → ≈14%

So nothing drastical happened plugging in all fwd muon counters in T3-system. In trigger-bits-hist. T3 came up a little bit.
Fwd-ct-hitmap not symmetric, but much better as in run 9107 • Pwire-wap many pick-ups in Ring I.
So we run at this conditions (BP-current .55 , not very stable; dead-time 13.8%; $\mathcal{L}_{inst}$ 7.00 E30).

09:40 Field-plotter doesn't work: after 2...3 copies paper comes out totally wet without drawings; lamp "INTLK" blinking. Can't repair it, so by the time no std-hist-printing possible! Paper was in the wrong way !!
Sometimes it works after opening and closing it again → perhaps run summary's possible to get.

10:10 "Badges.-Opt." on Petra-screen. paused run, went down with ID-HV. PKR is optimizing (lumi.

12:03 Lead glass-threshold set to 30mV (Trigger bits lead glass were a little bit too high)

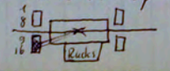
~12:15 Deadtime ≈50%, MP-Reject. ≈5%, event-rate ≈ 30 !!
looked to Hit Fwd-Hit-Map: ch. 10...16 really big. Old phenomen of last night.
After starting run 9116 pulled out cable 6 of fwd muon ct. (T3 trigger) → dead time 37%

12:28 Beam dump ; 7? cannot ~~7~~ " 7 " " → " 13%
study the problem.

13:22 new fill, started new run → dead time 70---80% ; hist. fwd hitmap crazy, T3 in trigger bits very large. Phone PKR.

13:32 We tried to vary the orbit for optimizing dead time (via PKR E-Han Fischer).
He said, PKR does not see the problem by themselves. It was not possible to make things better, after optimizing the lumi got worse.
We know, that this is not satisfying, but the only chance of running efficiently is to pull again out the cable 6+7 of fwd muon ct of T3-system.
So the deadtime went from 70 to <20 %!
One problem, that is not solved by disconnecting 2 cables: A lot of wires of the ID, Ring I, horizontal to the inner side of Petra, has a lot of pick-up and therefore small mean amplitudes

View from top.



see histo's in run-summ.-folder after run 9118!

14:05 Background grows worse and worse. (50% now). Pulled also out cable #8 → 15%
BP-current raised from .6 to ≈.8

14:21 After 2 ID-trips and fluctuating BP-current paused several times. PKR optimized, continued run.

15:17 switch off detector for beam dump

15:33 Bartel phoned from PKR, where he supervised the people:
Last fill was with wrong orbit-correction (2mm horizontal), hope that next fill will be ok again.
Also the feedback-platter works again!

16:00 Kobayashi / Augen

16:34 ID wants return an. trip/err light 6V/VV30 , Reset. Nowon.

19:01 PKR call – beams to be dumped at 19.30.

21:00 New filling is ready.

23:24 PLUTO wants to dump the beam soon.

23:27 Beam dumped.

8/11/81

0:00 Kanzaki and Hellenbrand on shift

1:80 New filling. Run 9125 starts.

1:43 ~~Beam~~ JOAS errors..
44 / 302
47 / 0
53 / 140204
47 / 0
primary error
software bugs after primary error

~~.~~ Run goes on.

1:45 ID trip HV OUTPUT, SPARK ~~7~~ R ~~7~~ → Reset → O.K.

1:50 – 2:15 several ID-trips, (anode current)

2:50 JOAS errors.
44 / 302
47 / 0
53 / 140204
47 / 0
the same sequence!

New filling – ID trips several times.

8/11/81 0800. HEDGECOCK & MINOWA ON SHIFT.
Several ID trips occur and BP current appears to be jumping.

0915 We lose some beam from both rings

0935 Beams dumped.

1020 Luminosity fine on TV screen but our background is still too high. Complain to PKR who try to improve matters.

1050 Beams are lost – background optimisation prevents any switch on of ID.

1115 New filling but bad background.

1155 Called PKR because of high background. An expert is coming in to optimise so we have to wait. (½ hour was stated.)

1240 PKR expert (HERR KOHAUPT) called and said that he would be investigating and asked us to switch on ID. and start Run. BP current below 0.8 but still appears to be erratic.

1245 PLUTO call us to say all other experiments (PLUTO, MARK-J and TASSO) are pleased with the present background condition.

1300 I put back the three cables for the T3 (FWD MUON 6;7;8.) and all seems to be normal at present. DEAD TIME (INST) 6.6% (@ SHIFT)

1318 ID tripped PKR made a slight change and some beam was lost. BP current dropped from 0.65 → 0.5

1334 Background optimisation so we PAUSE and switch off ID.

1337 ID on and continue.

1350 DEAD TIME suddenly jumps up so we remove 6;7;8 cables for FWD MUON CTRS. after looking at histograms. Also YSP4 message T2 trigger missing. D.T. ≙ 6%

1352 Yet more UNTERGRUND OPTIMIERUNG.

1540 PETRA short break for 1–2 hours.
run down the magnet to 500 amps.

1000 Power, Beat on shift

$$\int L\,dt = \underline{156\ nb^{-1}} \quad \text{[from forward counters]}$$
9120–9130

$$= \frac{2184\ (N_{Bhabha})}{15.5}\left[\frac{1.75}{1.5}\right]^2 = \underline{132\ nb^{-1}}\ \text{[from end caps]}$$

end cap luminosity is about 20% higher than what we record in the book

18²² · Transmitter fault again – Kurze Unterbrechung. No runs as yet.
~19⁰⁰ " " " — Unterbrechung — Start nicht vor 20⁰⁰ Uhr. Still no runs.
22³⁰ got beam at 17.5 GeV but most of it got lost after few minutes rest is used by PKR to optimize the orbit.

MONDAY 9/11/81

0:00 STEFFEN, BELL ON SHIFT

0:01 New fill, run started.

0:51 JDAS ERROR 44 SUBERROR 302 Δ AND (TIME OUT IN MUON CHAMBER SYSTEM)
" " 47 " 000 AND 140 CH (START PULSE MISSING)
} same as yesterday morning. See p. 117

appear. Stopped run. Started new run. Errors reappear immediately.

1:00 Try to contact Nowton, Eichler. No reply. Try to start new run. Errors appear immediately.

3:00 There is no trigger getting through for T1. Beam seems to be out later. Left a message at Hudson

3:30 Beam dumped.
Every time we try to start a run the N10, N50 counts to 13 on the TV then stops and the above JDAS ERROR MESSAGES appear.

4:00 New fill

6:00 Replaced muon system CAM grader and CAMAC crate control unit. Triggers now working. Start run.

6:45 H.V. switched off, beams dumped and magnet run down.

7:10 LG. BP. HV-system is switched off to exchange the broken 220V-power distributor on the 8 rack. Some of the power cables of the H.V. controllers will be examined. Yamada. H.V set must be before starting the next run. (Before 9⁰⁰ Minowa will be here.)

08⁰⁰ Elsen Hughes

08²⁷ Change Constant for online lumi calc" from $10.0E^{2}\ 10^{27}$ to $11.5E^{2}\ 10^{27}$ i.e. by +15%
Eichler changes YRUNSUM + YCLRTV for Summary Sheets + TV display.
Telephone Fr. Bans to change PKR computer program also.

Runs.	Energy	Lint.	# Bhabhas	Bhabhalumi	Ratio	
				559.7	0.90	see page 61
8752–8805	17.0	479.9		704.	0.92	see page 61
→8807	"	652.8				
8858→8870	"	176.0	2406	199.3	0.87	
8928→8962	17.5	466.0	6240	547.9	0.85	
9036→9073	"	415.0	5230	459.2	0.90	
9074→9111	"	309	4467	392.0	0.82	
9120→9130	"	156	2184	192.0	0.81	see page 118
		2673		3022	0.86	

8:55 PKR ask us to run up magnet.

10:00 Beams back. When trying to switch on HV, we find supply for BP-counters switched off. (Did the people doing some repairs on the plugs for the hv-system not switch it on again? They'll come back during break tomorrow morning)

10:07 Interlock bruch bei PLUTO!

10:09 BP cable 5 removed. Given 4 volts on monitor even with no beam

11:05 New fill ready. Start run 9138

11:17 JDAS Error ~~47/0000~~ 44/302 followed by 47/000 repeatedly. „no triggers"
Pause Run
Put Crate controller in crate 302 offline · press clear · controller back online also remove & replace 50 Ω terminator in fast clear on LAM Fäder.

11:33 Yspy reports Muon Digitizers ~~63,65,67,68,69,71 missing~~ 63, 65, 67, 68, 69, 71 missing

11:40 " " " " " " " " " " " "

Crate # 6 6 6 6 6 6 6
Wire # 199-202, 214-216, 225-230, 238-241,
again same digitizers missing

11:58 at event # 6000

12:02 IBM ONLINE JOB Error Check 3 (Bad Event)

12:08 YSPY reports same μ digitisers again, despite IG having reset the crate.

12:15 A Ball investigating μ " problems Crate # 6

12:30 Engel. Pluto phones to say that Hfrequency changed from 64 to 65 in last six digits.

13:30 Cords and Fichler found that the cable for the muon branch coupler had a "Wackelkontakt" and seem to have fixed it. This affects the transient problem 44/302 of last night and this morning.

13:35 JDAS Error 44/703.
YSPY Muon problem fixed C.B.

16:00 Cords & Glendinning on shift.

19:20 new filling; magnet event up
set beam pipe HV
2 ID alarms
continuous JDAS errors 60 values 2

19:50 ↓ this is the old problem that the upper plug on crate controller 1/branch 3 is shaky: wiggling and pressing it helped

20:25 one more ID trip

22:30 crate controller in crate 1/branch 3 exchanged: the new one does not clear lam's but it does not matter for this crate I suppose. D.C.

23:55 new filling

0:00 HEINZELMANN & BAMFORD on shift

0:07 slow run 9144.

1:02 Slow run 9145

1:25 ID trip reset OK.

2:25 Slow run 9146

2:50 Pluto phone and say we are having a new fill in 10 minutes.

4:22 New fill slow run 9147

5:27 slow run 9148.

6:52 Stop run 9148. Lower magnet → 500
this shifts field ~ 104 mb⁻¹!

8:00 Takeda & Olsen

10:00 Run up magnet to 7500 A on request of PKR

10:30 start run 9149, "background optimization" shows up again after a few minutes.
ID trips with Anode current. Leave chamber off.

10:35 Set BP HV by program

10:39 Continue run.

10:41 JDAS 44/703

11:00 Lead Glass threshold 30 mV OK

10/11 – 11 10 Notice sudden decrease of BP current from 0.5 to 0.1 V. Check HV → okay.
The beam current did not change at all!

11:20 Power ~~fail~~ in linear trip. for BP had failed. Switched crate on again. BP current at 0.4 V again.

11:30 JDAS 44/703 3 times

12:00 " "

12:10 YSPY: Forward TOF no hits 16, 17 → ignored.

13:05 New filling at 13:15.

13:10 "No trigger" on TV screen. I could not find what was wrong.
PAUSE then CONTINUE solved the problem!!!

14:08 New fill ready

RUN	DATE	START	STOP	I^+	I^-	DEAD TIME (%)	TIME (SECS)	RECORDS OUT	ALL TRIGGERS $\times 10^6$	Tϕ REJECT $\times 10^6$	Tϕ ACCEPT $\times 10^6$	T1 ACCEPT POSITRONS $\times 10^6$	T2 ACCEPT	T3 ACCEPT	T2 3TOF 3TR	T2 COLLIN	T2 $\geq$ 2TOF LG>1 $\geq$ 2TR	T1 LG>4	T1 LUMI	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ *RUN	$\int L dt$ 3767.70	IBM or TAPE	BEAM PIPE (V)	REJECT EVENT FRACTION (%)	# BHABHA	# MULTI HADS	BEAM ENERGY (GEV)		
9147	10/10/81	4:24	5:29	7.8	8.0	14.2	3897	8002	1015	144	870	26.8	10078	671	—	4483	2909	2952	899	7.41	28.87	3796.57	IBM	0.6	46.5	340	12	17.509		
9148	"	5:29	6:52	6.2	6.4	9.3	4915	7478	1280	118	1161	23.4	8821	467		5021	2121	2865	812	5.31	26.10	3822.67	"	0.4	48.7	321	3	17.509		Beam dumped
9149	"	10:28	11:50	7.8	7.1	13.2	4330	8002	1127	148	979	27.2	10346	540		4975	2648	4526	1030	6.44	27.88	3850.55	"	0.52	47.0	317	7	17.507	1328	
9150	"	11:50	13:18	5.8	5.5	8.4	5187	7206	1350	113	1236	21.5	8534	466	—	5061	1862	2594	791	4.91	26.47	3876.02	"	0.3	43.3	323	10	"	1328	Beam dumped
9151	"	14:07	14:29	9.1	9.1	12.8	781	1626	203	26	177	4.9	1792	122	—	905	438	613	192	7.86	6.14	3882.16	"	0.45	42.4	83	3	17.509	1328	
9152	"	14:45	16:17	6.3	6.3	9.4	5773	8002	1346	126	1220	24.7	9250	554	—	5279	2104	2987	858	5.34	27.61	3909.77	"	0.40	43.1	341	14	17.513	1327	
9153	"	16:17	16:32	5.7	5.7	7.6	2093	2942	545	41	503	6.9	3022	490	—	1949	657	987	282	4.32	9.06	3918.83	"	0.25	39.7	114	1	17.497	—	Beam dumped
9154	"	20:35	21:32	7.9	8.3	20.3	2885	8002	750	152	598	21.6	10464	464	—	4347	3095	2948	580	6.31	18.21	3937.04	"	0.7	46.3	194	6	17.513	1328	
9155	"	21:32	22:36	6.7	7.0	13.8	3799	8002	988	136	852	24.4	9984	559	—	4909	2648	3030	580	4.84	18.39	3955.43	"	0.6	45.0	209	5	17.505	1327	
9156	"	22:36	23:53	5.5	5.8	9.2	4405	6799	1146	104	1041	19.1	8177	418	—	4773	1931	2502	530	3.87	17.03	3972.46	"	0.45	43.2	209	6	17.500	1327	Beam dumped
9157	11/11/81	1:31	2:24	8.2	8.4	16.8	3216	7718	836	140	695	24.1	9914	539	—	4357	2873	2905	742	7.38	23.73	3996.19	"	0.75	46.9	275	8	17.513	1327	
9158 ⇓ 9164	"	No output due to the crate power problem. (see p. 125)																												
9165	"	2:51	3:53	6.4	6.6	10.6	3715	6477	966	103	863	18.4	7690	402	—	4156	2021	2450	612	5.29	19.67	4015.86	"	0.50	43.6	236	7	17.509	1327	Beam dumped.
9166	"	5:15	6:21	7.6	8.0	16.1	3611	8002	939	151	788	23.4	10122	557	—	4408	3431	3546	803	6.85	24.75	4040.61	"	0.70	46.4	286	10	17.513	1327	
9167	"	6:22	6:51	7.0	7.4	11.3	1753	3179	457	51	405	9.1	3855	240	—	2001	1137	1170	313	5.69	9.97	4050.58	"	0.50	44.2	121	4	"	1327	Beam dumped
9168	"	10:24	10:35	8.8	8.8	20.3	518	1297	135	27	107	3.5	1816	98	—	602	784	454	94	5.76	2.98	4053.56	"	0.72	48.3	36	1	17508		New Fill
9169	"	10:37	11:48	7.0	7.0	13.2	4248	8002	1106 ~~4774~~	146	960	22.9	10354	566	—	4809	3409	3052	683	5.12	21.74	4075.30	"	0.66	46.9	274	4	17504	1327	
9170	"	11:49	13:22	5.5	5.5	8.5	5540	8002	1442	122	1319	21.4	9365	550	—	5094	2609	2977	736	4.26	23.58	4098.88	"	0.48	42.8	278	11	17500	1326	
9171	"	13:22	13:32	5.9	5.9	6.9	550	672	143	9.9	133	1.7	768	36	—	471	221	601	100	3.72	2.05	4100.93	"	0.37	41.6	20	2	17500		
9172	"	19:45	20:40	8.2	8.4	20.4	3103	8002	807	165	642	21.6	10582	522	—	4471	3617	2953	648	6.65	20.63	4121.56		0.75	47.2	252	6	17.509		
9173 → 9175		LOST RUN NUMBERS DUE TO NORD/RTX PROBLEM (P.126)																											~~1328~~	
9176	11/11/81	23:01	23:55	8.3	8.6	~~2~~ 181	2691	6532	700	127	573	205	8776	406		3480	2845	2354	544	6.45	17.35	4139.91		0.7	47.8	206	7	17.512	1328	Beams lost
9177	12/11/81	0:55	2:29	5.4	5.8	8.5	5652	8002	~~2.137~~ 1.571	124.6	1.346	21.6	9661	430	—	5532	2580	3074	740	4.22	23.85	4163.76	IBM	0.5	43.7	279	9	17.497	1327	
9178	"	2:29	2:48	5.1	5.4	6.9	1079	1372	280.	19.5	261	3.1	1602	66	—	1018	394	505	117	3.47	3.74	4167.50	"	0.35	41.4	59	1	"		new fill 6 pedestal events got stuck in NORD
9179	"	no events — IBM down																												
9180	"	3:27	4:35	7.1	7.7	13.4	4011	8002	1043	140.	903.	24.5	10293	629	—	4718	3307	2973	706	5.65	22.65	4190.15	FILL 184 TAPE	0.60	46.5	276	5~~8~~	"	1327	
9181	"	4:34	5:24	2.7	2.8	9.0	2778	4162	723	65.	658	11.3	4875	261	—	2714	1260	1594	386	4.49	12.47	4202.62	IBM	0.45	41.2	160	6	17.500	1327	beams lost
9182	"	6:15	6:58	7.1	9.0	17.6	2285	4877	595	104.	490	15.0	6267	374	—	2668	2687	2515	438	5.78	18.20	4315.82	"	0.62	46.8	167	7	17.508	1327	beams dumped
9183	"	11:31	11:33	6.8	7.2	18.4	50	179	13.2	2.4	10.8	0.2	142	7	—	42	25	35	12	4.7	0.24	4216.06	"	0.5	(9.6)	1	0	"	—	
9184	"	13:37	14:45	7.0	8.0	13.1	4049	8002	1084.	138.5	945.	23.8	9455	605	—	1678	871	2793	946	7.54	30.54	4246.60	"	0.6	44.0	365	12	17.511	1327	
9185	"	14:45	16:11	at start 699	7.97	8.9	5117	7875	1332	117.7	1214	18.78	8941	464	—	5107	2479	2911	902	2.56	13.11	4259.71	"	0.44	42.2	339	10	17.503	1328	Beams lost.
9187	"	16.40	1651	9.0	9.6	15.1	654	1440	170	25.6	144.6	4.19	1722	118	~	812	483	495	177	8.81	5.76	4265.47	IBM	0.65	447	64	2	17513	1328	Beams dumped ⇒ new energy cal.

14^{20} ID tripped.
Anode Current 30.6 at ϕ24
Reset and Switch on HV.
Immediately, it tripped again.
This time. 1R1 spark, HV output 8.
Call Wagner. (Because Hellenbrand was not in his room).
readjust HV-input monitor threshold for D1. This was primary reason of NOT-aus. 1R1 was only a secondary effect. I hope it works now.

14^{45} : Continue data taking

15.30 ~~H+S~~ : Changed Coincidence of TOF counter 39, output was very narrow and it was inefficient for quite some time. B.N.

15:30 ID tripped. Anode current & 1R1 spark.
Reset. Restart.
15:35 JDAS ERROR 63 SUBERROR 27 (TOF wrong length)
took place once.

"Bad Event Structure" on the TV screen.
Immediately it disappeared. Ignored it.

16:00 Bethke / Kobayashi on shift
20:30 New filling ready
23:27 YSPY: "Trigger 1 IP missing 12 ... 23". Reason: BP-Crate branch 2 was missing. switching off and on → O.K.

11 / 11 / 81
0:00 Bowdery & Kanzaki on shift.
01:00 Still no beams.
01:29 Start run 9157
We notice that beam crossing monitor says that the positrons are missing!
We fiddle around with the input cable and they come back again!!
01:36 YSPY reports that FWD μ counter (tubes 14 & 15) has no hits. We decide to ignore this warning at present.

$\mathcal{L}_{ave} = 9.46 \times 10^{30}\,cm^{-2}s^{-1} \Rightarrow$ increases 101×10^{31} !

TASSO	1.5×10^{31} unconected	Not bad!
MARK J	1.1×10^{31}	
JADE	1.05×10^{31}	
PLUTO	$\sim 1.0 \times 10^{31}$	

02:15 We notice that the BP current reading has dropped from about 0.6 to 0.2. We also notice that one of the crates associated with the BP readout has no power lights on. Also the beam crossing monitor said that the beams had gone (which they hadn't). Finally to add weight to our diagnosis of a problem, YSPY reported a BP & T1 problem.
We switched the offending crate off and on again. We did the same to the other BP crate. This solved the problem.
We then reloaded the BP HIPROC and started the run ⇒ DHA timout, because we did not start the TOF HIPROC

Note: RESTART PROCEDURE FOR BP & TOF A99s
STOP run
F19
F11
F12
: ϕ↵ starts BP A99
F12
: 1↵ starts TOF A99
F1
start new run

02:50 Same BP problem again ⇒ spotted early ⇒ crate switched off & on ⇒ problem solved
06:50 Beam dumped. Run down magnet to 500 A.
07:13 To exchange the broken 220 V-power distributors on the rack LG. HV-system (HV-power supply & distributor) is switched off. H.V. for L.G. must be set before starting the next run.

08:00 Marshall & Matsumura on shift
Energy saving till 09:00
09^{25} start up again ← HV's for LG & BP was set. (Yamada)
10 35 IBM Transfer Error stop Run 9168
10 35 Restart
13^{05} Pluto suggest was fill to optimise running between the two ES shutoffs. Sychs won't offer electrons, so have to wait.

15[sa] Can also fill so they try — not very successful 15[15] still trying — it would have been better to continue with old fill — this situation arose more often than not.

16[00] Ball + Steffen on shift

16:31 PKR. Decide to abandon attempts to inject, and to start energy-scanning.
Beams dumped. Magnet run down to 500A

19:20 Magnet → 7500A.

19:45 New fill ready. Start run 9172.
DT ~20%. Check LG thresholds, OK. Z vertex distribution OK. trigger bit histogram normal.

20:18 ID trip.

21:00 Run 9172 stopped after 8002 events with a 'no triggers' message.
Run stopped manually. Try to start new run. After parameter setting get timout error (JADAS hu)
Suberrors are 0, 203, 0, 203, 0, 203 in succession.
Try shaking cables on BR2, C3, try crate on-off, clear etc. no effect. Ring Beate Naroska + Ralph Eichler. Suggest changing crate-controller. After some confusion about which crate it is, due to crate-map ambiguity, we do this, and now get SCALER CRATE UNREADABLE message on TV screen + every time we try to start a run, ~~reset + count~~ get 1 TRIG, then NORD hangs up. RAE coming (Later 'SWITCH OFF...' appeared)

21:55 Beams to be dumped after 2 partial beam losses in last hour. We were not consulted first, so stay switched on for another 3 mins (after informing PLUTO & PKR) to do one last test on CRATE, NORD etc. No luck.

21:58 Beams dumped

22:10 Test Nord Memory error log: 0 errors. Restart Nord: illegal parameter in updat. Stop Nord, switch off RTX, System crate (bobem + top) and switch back on in reverse order. Everything seems to work again

23:00 New fill ready. Start run 9176. (Runs 9173, 74, 75 were junk runs during attempts to cure above problem).

23:02 ID trip. — further background optimisation.

23:55 Beams lost. stop run 9176.

16/11/81

0:00 Eisen, Bethke on shift

2:45 Beams dumped

3:20 New filling ready. IBM busy. No conclusive answer from operators about length of IBM down-time. ~~Data to tape~~. Run 9179 consisted of 6 pedestal events which probably never arrived at the IBM.
Start run 9180. Write to tape

5:25 Beams lost

6:15 New fill ready. Start run 9182

6:48 JADAS 44/703

6:57 Stop run 9182. Magnet to 500 Amps

8:00 Takeda * & Warming on shift * Orito △ for Takeda △ Kanzaki for Orito
⇒ a new Jade-member has arrived: Takeda got a girl this night ← This has more than one meaning !!

9:10 run up Magnet

9:20 pump failure (Schütz ausgebrannt) → magnet down

11:25 the power switch has been replaced successfully
raise magnet current to 7500 A

11:31 start run

11:33 beams lost → so we got 1 (in words: one) blokka from this fill

12:00 new fill ready

12:02 during running up the D-HV, fluctuation on DESY-power line → beams lost, PETRA computer down

13:35 new fill ready

13:40 Lead Glass thresholds: "30mV" → "50mV"

14:45 LG threshold "50mV" → "45 mV" → "30mV"

15:05 YSPY found hole in FORWARD MUON COUNTER HISTOGRAM
when touching the cables going into the discriminator the holes goes away

16:00 Marshall and Odaka on shift

:07 ID trip Beams lost.
Coffeenity is ended run. Got going. run 9186 doesn't exist

:39 New fill

:45 LG-thresholds were adjusted. (45 mV)

16:50 Beams dumped for energy cost saving

:58 The magnet was powered down to 500 A.

19:05 The magnet was powered up to 7500 A.

19:51 New Fill after some troubles.

21:15 Pluto want a new fill. I demur but Pluto, Tasso and Mark J are all prepared to murder this fill at 5.8 nA and the 3:1 majority wins. If previous experience is anything to go by, we will get no more luminosity this shift.

22:30 New fill at second attempt.

RUN	DATE	START	STOP	I^+	I^-	DEAD TIME (%)	TIME (secs)	RECORDS OUT	ALL TRIGGERS $\times 10^6$	T0 REJECT $\times 10^6$	T0 ACCEPT $\times 10^6$	T1 ACCEPT POSTRONS $\times 10^6$	T2 ACCEPT	T3 ACCEPT	T2 3TOF 3TR	T2 COLIN	T2 2/3TOF CG71 2ZTK	T1 CG74
9188	12.11.81	19.52	21.29	5.5	5.7	7.4%	5830	7883	1518	111.6	1405	17.56	8697	464	—	5484	1905	2871
9189	"	22.37	23.47	7.7	8.1	13.3	3904	8002	1016	134.8	880.9	21.45	9701	935	–	4725	2501	2689
9190	"	23.48	1:13	6.2	6.5	9.5	5080	8002	1321	125	1196	21.4	9399	959	—	5377	2282	2819
9191	13.11.81	1:13	1:18	6.1	6.4	6.9	296	384	77	5.3	71.7	0.98	398	32	—	256	72	137
9192	"	2:07	3:11	7.6	8.4	14.2	3770	8002	980.5	139.4	841.1	26.5	9831	747	—	4712	2366	2884
9193	"	3:11	4:03	6.1	7.4	10.4	3094	5198	805	83.4	721	16.8	6093	413	—	3480	1324	1923
9194	"	11:13	11:57	8.2	8.0	11.0	2626	4756	683	75	608	12	5382	272	–	2823	1375	1284
9195	"	13:13	14:25	7.3	7.9	14.1	2492	5307	648	91	557	15	6310	406	—	3081	1542	1861
9196							Twice out problem in TOF crate											
9197																		
9198	"	16:24	16:40	3.8	4.1	4.5	544	328	142	6	135	0.97	556	18	—	419	109	174
9199	"	19:35	20:18	9.4	9.4	13.7	2518	5163	655	90	565	16.9	6134	462	–	3109	1552	1813
9200	"	21:16	22:23	7.6	8.3	13.5	3928	8002	1022	137	884	26.8	9682	599	–	4780	2028	2811
9201	"	22:24	23:32	6.3	6.8	8.9	4082	6227	1064	94	969	19.7	6818	488	–	4298	1072	2287
9202	14/11/81	0:15	0:22	?	?	13.3	411	884	106	14.1	92	2.8	951	81	–	519	189	269
9203	"	0:56	2:20	3.7	4.1	8.8	4907	7281	1277	113	1164	20.3	8316	536	—	4908	1842	2710
9204	"	3:34	4:35	8.0	8.5	15.2	3533	8002	918	139	779	24	9650	625	–	4601	2904	4257
9205	"	4.35	5.56	6.2	6.7	9.7	4837	8002	1257	122	1135	22.2	8454	564	–	5137	2312	3015
9206	"	5:57	6.03	6.1	6.5	7.9	348	479	85	6.7	78	1.1	507	33	—	345	111	178
9207	"	6:36	7:42	7.8	8.1	14.0	3789	8002	986	137	848	25.9	9512	680	—	4670	2506	3880
9208	"	7:42	8:54	2.6	2.6	9.1	4278	6680	1113	102	1001	20.1	7369	522	–	4322	1667	2488
9209	"	9:39	10:44	7.9	8.1	13.4	3888	8002	1012	135	876	27.1	9510	702	–	4614	2247	2965
9210	"	10:45	12:11	6.1	6.3	9.2	5134	8002	1336	122	1213	23.3	8975	570	–	5305	2085	3066
9211	"	12:11	12:23	5.9	6.1	6.8	682	903	177	12	165	2.1	911	58	–	591	195	351
9212	"	14:06	14:37	8.7	9.0	21.2	1160	2981	302	64	238	7.5	8895	192	–	1360	1460	2928
9213	"	14:38	15:54	6.7	6.8	10.5	4461	8002	1161	121	1039	21.6	8448	563	–	4769	2023	3181
9214	"	15:55	17:04	5.5	5.7	7.0	4124	5452	1073	75	998	13.3	5473	356	—	3707	1015	2102
9215	"	18:31	19:32	8.0	8.4	14.7	3607	8002	938.8	138.2	800.6	24.78	9550	693	—	4320	2586	2964
9216	"	19:32	20.21	—	—	10.5	2874	5093	748	78.4	669	15.0	5648	344	–	3121	1388	2016
9217	"	20.49	21.22	8.7	9.1	15.9	1944	4654	506	80.5	425	14.2	5438	433	–	2545	1396	1701
9218	"	21.32	22.58	5.3	5.6	10.8	4780	8002	1244	134	1110	22.2	8699	573	–	4856	2064	3269
9219	"	22:59	23:28	4.7	5.0	5.4	1756	1921	457.0	24.58	432.4	3.795	1956	104	—	1362	413	791
9220	15.11.81	0.07	1.22	9.7	10.1	13.7	3985	8002	1037	142	895	22.3	9275	573	–	4416	2675	2943
9221	"	1:23	2:50	5.6	6.0	8.2	5236	80002	1362	111	1250	18.8	8168	470	—	4932	2032	3055
9222	"	2:51	2:51	5.5	6.0	5.6	31	99	8.16	0.45	7.7	0.096	31	1	—	29	9	15

T1 LUMI	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ RUN	$\sum \int L dt$	IBM TAPE	BEAM PIPE (V)	REJECT EVENT FRACTION (%)	# BHABHA	# MULTI HADRON	BEAM ENERGY (GeV)	TDC 85	
916	5.07	29.58	4295.05	IBM	0.45	40.9	382	13	17.493	Beams dumped	
713	5.95	23.22	4318.27	"	0.65	44.9	291	10	17.513	~~1327~~	
688	4.32	21.92	4340.19	"	0.45	43.5	304	9	17.507	1327	
38	~~4.93~~ 1.25	1.19	4341.38	"	–	37.8	11	2	"	–	Beams dumped
800	6.89	25.96	4367.34	"	0.7	45.6	327	10	17.508	1327	
517	5.36	16.59	4383.93	"	0.5	43.3	187	7	"	1327	Beams lost
605	7.42	19.47	4403.40	"	0.5	42.6	225	11	17.509	1327	Beams lost
661	8.50	21.17	4424.57	"	0.65	44.2	250	7	17.508		
											no events
44	2.61	1.43	4425.99	"	0.2	35.2	14	0	17.493	1327	Beams lost
598	7.66	19.28	4445.27	"	0.55	44.5	258	7	17.513	1328	Beams lost
945	7.73	30.36	4475.63	"	0.6	44.7	327	12	17.507	1327	
752	5.92	24.20	4499.83	"	0.45	41.3	289	12	17.505	1327	Beams dumped
100	7.82	3.22	4503.05	"	0.65	46.7	41	0	17.~~468~~	1328	BEAMS LOST
780	5.08	24.93	4527.98	"	0.54	42.6	341	9	17.487	1328	Beams dumped
959	7.8	27.54	4555.52	"	0.65	44.9	325	15	17.510	1328	
908	6.05	29.26	4586.78	"	0.50	42.2	324	14	17.500	1327	
51	4.97	1.63	4586.41	"	0.35	39.6	23	3	17.5	–	BEAMS DUMPED
976	7.4	28.04	4614.45	"	0.65	44.5	335	11	17.513	1327	
707	5.29	22.65	4637.10	"	0.45	41.3	251	11	17.504	1327	Beams partially lost
910	7.45	29.12	4666.22	"	0.7	43.9	348	13	17.509	1328	
867	5.40	27.70	4693.92	"	0.5	42.2	312	10	17.497	1327	
100	4.76	3.25	4697.17	"	0.4	37.9	41	0	17.497	1326	Beams dumped
462	8.93	10.36	4697.53	"	.65	47.8	115	5	17.513	1328	
973	7.02	31.33	472886	"	.5	40.9	406	9	17.504	1328	
657	5.09	21.01	4749.87	"	.35	38.2	247	5	17.504	1327	Beams dumped.
845	7.61	27.46	4777.33	"	.65	45.0	308	10	17.513	1328	
541	6.04	17.35	4794.68	"	.5	41.9	183	3	17.506	1328	Beams lost.
486	7.98	15.52	4810.20	"	.65	43.8	193	3	17.512	1327	terminated to re-load NORD
841	5.49	26.25	4836.45	"	.54	41.2	331	8	17.491	1327	
206	3.79	6.65	4843.10	"	.25	39.0	78	3	17.491	1327	Beams dumped.
937	7.64	30.45	4873.55	"	.65	44.1	339	8	17.513	1327	
921	5.66	29.64	4903.19	"	.45	38.4	314	7	17.513	1327	
5	5.45	0.17	4903.36	"	.30	16.9	2	0	17.513	1329	Beam dumped

13/11/81 (FRIDAY)!!!

0:00 McCann + Minowa
01:10 PLUTO will request a new fill in 5 minutes.
01:20 Beams dumped.
04:04 Beams lost., — JETCH HIGH CURRENT FAULTY PART 96.
06:30 Energy saving time
Run down the magnet to 500 A.

0800. Nozaki + Murphy on shift.
10.00 Beams ready. PKR ask us to ramp magnet → 7500 A. Just after a minute Beam is lost.
10.30 Beam is ready. Switch on H.V.
10.35 Beam lost.
11.09 Run 9194 started.
11.26 Lead glass thresholds are adjusted.
11.50 Beam lost
13:11 Back on. Start run 9195.
13.22 LG threshold are adjusted.
14:02 Magnet trip. magnet current was 476.
Rack hall < 35° lamp ON.
We call K group. They found several fuses are broken.
The repair is ~~estimated~~ to take 1 or 2 hours.
14.22 Stop the run.
15.20 Beam is ready but K people are still working for repair.
We wait until they finish the work.
15.50 Magnet is ready.
Start run 9196. JDAS ERROR 44 SUBERROR 203 occurs continuously.
Call Schmidtmann + Coords. Each controller board 2/crate 3 needed CAM jumper
16:00 Kobayashi flown on shift
16:30 Start run 9198
16:40 Beams lost No new beams before start of ES-clinic. Run down magnet to 500 amps
19:0 PKR asks us to run up magnet → 7500
19:34 New fill ready. Start run 9199

SATURDAY 14/11/81 * CONGRATULATIONS DR. BARRY KING. *

0:00 KANZAKI, BELL ON SHIFT
0:12 New fill, run started.

0:20 I.D. trips. Reset.
0:21 Beams lost
0:54 New fill, run started.
0:58 Lead Glass thresholds optimized.: "50 mV" → "35 mV"
1:06 I.D. trips Reset
1:13 YSPY DETECTED ERR
FORWARD TOF NO HITS 16,17
Checked corresponding discriminator outputs → O.K.
1:45 YSPY DETECTED ERR
FORWARD TOF NO HITS 14,15.
Again we checked the discriminator out-puts by the scope. → O.K. → then it is cured.
"Bad connection"?
2:04 PLUTO phone. Ask about new fill. Although lumi is still at 3/7 the currents are falling rapidly.
We agree to a new fill.
2:20 Beams dumped.
3:33 New fill. Run 9204 started.
3:40 I.D. trips. Reset
5:10 JDAS Error 44/703
6:00 Beams dumped.
6:33 Beams filled. Run started.
8:41 I.D. trips. Reset

8:00 Bartl & Kuner on shift
8:43 big fraction of the beams lost without ID - trip
8:40 to take it down once again: there are still 7 forward μ-chr-cables pulled out:
4-8 and #12, 13 4/5 & 12/13
+ 6;7;8.
9:36 Lg thresholds ok
12:20 beams dumped
14:07 ID trips
14:15 ID trip background busts
14:48 ID trip
One mod cap block seems to be noisy with 'high energy' the next shift (Odaka) should have a look at it. → I had a looks at it. See next page. ODAKA
15:45 Record 31.3 nb^{-1} per run

16⁰⁰ Odaka & Duerdoth on shift.
16⁰⁵ Pluto want a new fill. Once again they want to monitor the fill at 2×57mA and we still have L=5×2×10³⁰.
Bye I guess for another ½ hour but again we are outvoted 3:1.
17⁰⁰ Beams dumped.
18:23 New fill 18:38 Start run 9215 OFF time = 86 mins. 18:35 LG thresholds were adjusted. (Noise = 35 mV)

A problem on LG, see the last page.
A counter (End Cap #72) provides a very high counting rate, which can be seen in the LG-hit map. But it is not due to the PMT, because we can see some hits in very low energy bins of the histograms LG-THRESHOLD 2 and 3. Perhaps it is due to a ADC-trip.
Please call any expart if the dead time gets too high. ODAKA
—— Checking histograms of old runs, it was found that this problem appeared at the run 9210.

19:06 YSPY ERROR (Forward TOF counter no hit : 16, 17)
:38 " " " " 14, 15.
58 " " " " 14, 15.
20²⁰ beams lost. — I.D. did not trip.

20:40 New fill
:48 RUN 9217 started. OFF time = 27 mins.
:50 LG Thresholds were adjusted. 40 mV
21:20 NORD 50 BUSY → NO TRIGGER, Stop RUN 9217 NORD 50 had 'STOP' light on & no lights flashing. Restart the NORD 10 and away we go....
21³² start 9218 21:35 adjusted the LG-thresholds Noise 35mV
:40 ID-trip
:54 "
23:28 Beams dumped.

15.11.81
0⁰⁰ Y. Zhang & A. Wagner
0⁰⁷ new fill ready
0¹⁰ unstable beam, ID trip
2⁵¹ Pluto wants a new fill
3³⁰ new fill ready
4⁰⁵ YSPY ERROR (Forward TOF count no hit : 14, 15)
4¹⁰ partial beam loss, no alarm → refill in ~ 10 min
4¹⁵ Beam lost
4⁴⁰ New fill ready

5¹⁰ beams lost.
5³⁰ New fill ready
5⁴⁵ Disk 95% full. Call IBM → dump job is running. I hope the IBM dumps faster than we accumulate. IBM made it first!
6⁰⁵ ID trip
7⁵⁵ beams dumped for new fill. $\int_{0^h}^{8^h} L\,dt = 139.52\ nb^{-1}$

8⁰⁰–16⁰⁰ P. Murphy & S. Yamada on shift.
8:40 ID trip.
11:00 ID trip
11:20 LG threshold adjusted 30 ~~mV~~ mV → 35 mV.
11:33 ID trip.
14:05 ID trip
14:20 ID trip.
~14:40 Display program became crazy: → NORD is stopped & reloaded.
15:00 ID trip
15:05 ID trip. ID. alarm occurs rather often although the BP. current isn't so high.
15:45 LG threshold adjusted 35 mV → 30 mV.

16⁰⁰ Feist & Duerdoth.
16⁵⁰ Beams dumped.
17²⁰ New Fill. Time out problems. branch 2, crate 1.
19¹⁰ Beams dumped. — without prior consultation! with >6mA and > 6×10³⁰.
20⁰⁵ New Fill.
20²⁰ I.D. trip.
22²⁰ beams dumped. & new fill. JADE off time = 22 mins

We accumulated 117.6 nb⁻¹ on our shift and hope that

16.11.81
0⁰⁰ M. Mathewson + A. Petersen will get even more
1⁰² I.D. trip
2⁰⁵ new filling
2³⁰ I.D. trip
5²⁰ ZDAS ERROR 44 SUBER. 302
47 000
53 100204
47 000

5⁴⁵ Nord crash down! ERROR 24 in 34643 at 15 ring rotation no Run summary NAO ~~New~~ New Load

RUN	DATE	START	STOP	I^+	I^-	DEAD TIME (%)	TIME (SECS)	RECORDS OUT	ALL TRIGGERS $\times 10^6$	T0 REJECT $\times 10^6$	T0 ACCEPT $\times 10^6$	T1 ACCEPT T1STROBE $\times 10^6$	T2 ACCEPT	T3 ACCEPT	T2 3TOF 3TR.	T2 COLLIN	T2 $\geq$2TOF $\geq$3TR.	T1 LUMI
9223	15.11.81	3^{35}	4^{20}	9.6	10.1	11.1	2646	4629	638	76.3	611.9	12.5	5425	326	—	2706	1509	1775
9224	"	4.45	5.15	10.4	9.90	14.6	1637	3742	425	62.1	363.7	9.6	4425	273	—	1998	1406	1398
9225	"	5.36	6.38	10.4	9.9	14.10	3564	8002	927	131	796	19.4	9270	519	—	4158	2959	3245
9226	"	6.38	8:03	7.8	8.3	8.0	5005	7447	1302	104	1198	16.3	7921	423	—	4677	2832	3056
9227	"	8.37	9:47	9.6	10.2	13.0	4024	8002	1047	136.5	910	23.7	9672	554	—	4506	2905	4116
9228	"	9.48	10.18	6.7	7.3	9.5	4847	2790	462	44.1	418	8.0	3317	167	—	1760	974	1062
9229	"	11.05	12.15	6.9	7.4	12.1	4077	8002	1061	128	933	21.1	9238	523	—	4406	2790	4036
9230	"	12:16	13:28	5.3	5.8	7.2	4312	5747	1121	80.6	1041	14.2	6360	326	—	3903	1452	2263
9231		14:06	14:44	8.6	7.8	14.2	2167	4805	564	79.9	484	13.0	5480	371	—	2403	1524	2295
9232		14^{45}	14^{45}	8.5	7.8		27											
9233	"	14^{52}	16^{18}	6.3	5.7	8.8	4983	8002	1297	114	1183	18.7	8263	511	—	4759	1995	4158
9234	"	17.27	17.27	9.3	9.9		21											
9235	"	17^{36}	18^{47}	7.2	7.7	13.2	3895	8002	1013	133	880	23.1	9470	550	—	4431	2805	3147
9236	"	18^{47}	19^{15}	6.3	6.9	9.0	1524	3509	397	36	361	6.3	2634	150	—	1522	649	1002
9237	"	20^{17}	21^{35}	7.3	6.5	11.2	4469	8002	1163	130	1033	23.3	9277	523	—	4684	2498	3230
9238	"	21^{36}	22^{24}	6.2	5.5	7.6	2848	3942	741	56	685	9.5	4206	227	—	2608	992	1569
9239	"	22^{46}	23^{44}	8.2	8.3	15.4	3481	8002	908	139	768	24.5	9621	685	—	4307	2815	3117
9240	"	23^{44}	1.03	6.5	6.5	10.0	4661	8002	1212	122	1091	22.8	8843	557	—	4810	2275	3755
9241	16.11.81	1.05	1.48	6.5	5.7	7.2	2494	3466	649	47	602	7.9	3543	167	—	2252	785	1324
9242	"	2:08	3.10	8.3	8.1	14.8	3555	8002	925	137	788	25.1	9273	694	—	4218	2506	3838
9243	"	3:10	4.29	6.3	6.2	9.3	4588	7653	1194	111	1083	19.3	8118	448	—	4605	1998	3059
9244	"	4.59																
9245	"	5.48	6.40	5.0	5.0	6.1	3085	3669	803	49	754	8.9	3882	210	—	2712	741	1408
9246	"	9.24	10.25	7.2	7.7	12.3	3667	6918	954	117	837	27.4	7782	638	—	4534	2640	3197
9247	"	10.26	11.51	5.7	6.1	9.3	5065	8002	1318	123	1195	24.6	9181	534	—	5255	2144	317
9248	"	11.51	12.10	5.3	5.7	6.7	1128	1412	293	19.8	274	3.5	1572	88	—	1023	334	559
9249	"	14.09	15.08	7.5	7.8	18.1	3326	7772	866	157	709	24	11535	600	—	4245	3130	2818
9250	"	21.34	22.36	8.98	9.50	14.8	3747	8002	975	144.6	830.3	26	10004	813	—	4512	2806	2839
9251	"	22.37	23.33	7.28	7.74	10.9	3196	5660	831.5	90.3	741.3	17.3	6525	721	—	3424	1600	1768
9252	17.11.81	00^{42}	1.47	8.1	8.3	16.7	3468	8002	902.5	150.7	751.8	28.3	10559	820	—	4484	2719	2932
9253	"	1.48	03^{09}	6.5	6.6	12.2	4156	7383	1081.3	132.5	949	26.4	9078	718	—	4749	2000	2596
9254	"	03^{09}	03^{38}	6.0	6.1	8.5	1770	2553	460.4	39.3	421.1	8.4	2967	215	—	1858	571	885
9255	"	04^{36}	05^{43}	7.8	7.7	13.7	3963	8002	1031.7	140.9	890.8	28.2	9981	765	—	4926	2196	2873
9256	"	05^{43}	06^{36}	6.6	6.6	9.1	3086	4846	803	73.3	730	15	5412	339	—	3366	1052	1782
9257	"	06^{58}	06^{49}	6.4	6.3	7.7	614	858	160	12.3	148	2.5	916	67	—	585	179	308

T1 LUMI	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ RUN	$\int L dt$	ZBM/ TAPE	BEAM PIPE (V)	REJECT EVENT FRACTION (%)	# BHABHA	# MULTIHADRON	BEAM ENERGY (GeV)	TOC	
804	6.10	16.14	4919.50	ZBM	0.6	84.2	212	5	17.531	1327	Beam lost
361	7.08	11.58	4931.08	"	0.65	93.8	148	1	17.515	1327	Beam lost
791	7.19	25.63	4956.71	"	0.65	44.0	326	13	17.514	1327	
804	5.18	25.91	4982.62	"	0.40	40.6	307	6	17.504	1327	
882	6.32	25.41	5008.03	"	0.53	45.1	313	11	17.504	1327	
257	4.61	8.19	5016.22	"	0.4	43.6	85	1	17.504		Beams dumped
899	6.56	26.75	5042.97	"	0.37	43.9	313	17	17.504	1327	Beam energy was varying between 17.504 and 17.511.
587	4.36	18.79	5061.76	"	0.34	41.2	247	7	17.500	1327	Beams dumped. $1\ 3^{25}$
588	7.92	17.16	5078.92	"	0.57	43.1	213	4	17.512	1327	
	6.79	0.18	5079.10				4	0	17.506		very short run.
1001	5.90	29.41	5108.51	"	0.4	39.9	360	9	17.500	1327	beams dumped.
	8.40	0.18	5108.69	"	0.68		5	0	17.513		short run. tune/cit problem
883	7.26	28.30	5136.99	"	0.64	44.6	327	4	17.504	1327	
295	6.19	9.43	5146.42	"	0.45	40.3	109	0	17.496	1327	~~beams dum~~ beams dumped.
863	6.19	27.66	5174.08	"	0.7	44.0	321	11	17.504	1327.5	
447	5.05	14.39	5188.47	"	0.35	40.6	163	3	17.500	1327	beams dumped.
744	7.29	25.46	5213.93	"	0.75	45.2	312	8	17.508	—	
798	5.52	25.71	5239.64	"	0.55	42.0	313	10	17.500	1327	
481	4.42	12.27	5251.91	"	0.38	38.2	146	2	"	1327	beam dumped
918	7.48	26.57	5278.48	"	0.73	43.8	326	8	17.504	1327	
890	6.21	28.47	5566.95	"	0.52	40.5	355	13	17.500	1327	beam dumped
				"	0.73					1327	run summary lost!
368	3.83	11.82	5578.77	"	0.36	40.0	126	4	17.496	1327	
5	—	27.3	5606.07	"	0.70	41.5	341	7	17.513	1328	TAG EHT'S OFF, $\int L dt$ from online Bhabhas.
807	5.13	25.99	5632.06	"	0.35	43.1	324	7	17.496	1328	
146	4.23	4.77	5636.83	"	0.34	42.0	58	5	17.498	1327.5	Beams Dumped.
611	5.88	19.54	5656.37	"	0.82	51.5	259	8	17.504	1328	Beams Lost.
805	6.86	25.70	5683.07	"	1.10	46.2	323	7	17.504	1329	
482	4.83	15.43	5698.50	"	0.66	43.3	187	5	17.504	1329	Beam dumped
781	7.18	24.91	5723.41	"	0.92	48.3	299	11	17.513	1328	
686	5.32	22.13	5745.54	"	0.70	45.2	251	9	"	1328	
252	4.48	7.93	5753.47	"	0.53	42.4	104	1	17.511	1328	beams lost
814	6.55	25.94	5779.41	"	0.93	46.0	328	11	17.513	1329	
556	5.77	17.80	5797.21	"	0.63	41.7	195	7	17.504	1328	IBM ERROR 54 Run stopped.
94	4.96	3.04	5800.25	TAPE		39.6	42	0	17.500	1328	OUTPUT TO TAPE. F11-220
											Beam dumped.

16.11.81 6.01 TOF no hit 30, 31

6⁴⁰ Energy saving Magnet → 500 A

8⁰⁰ Rowe and Minowa

9¹⁵ Beams ready. Magnet → 7500 A.

9³⁵ Reset volts on Tagging MFR 61 — the whole lot of channels.

10²⁵ Naroska comes — we can't reset Tagging EHT's. Work is being done on the cables ~~so~~ during energy saving, so the EHT's were all off. A mupiroz. should remember EHT values and set them automatically on switching back on. This does not happen apparently. Naroska has reset them and we have started a new run. This problem will probably recurr tomorrow morning when work on the cables is renewed.

11⁴⁰ LINAC trouble. next fill at least after half an hour.

14²⁰ Run 9249 paused ∴ of high background. On reconnecting the beam pipe counters (the noisy channels not being very noisy) the voltage was 1.[illegible] V. PKR 'optimised' but no better, still ~ 20-25 % dead time. Will phone round the other expts. to see what their is like. Mark J and Tasso don't care about high background but don't like low luminosity. Pluto don't like high background. I phoned PKR and they say they cannot do anything, but hope it will improve soon. Meanwhile we still run. Dead time ≐ 20%.

who is coordinating ?? .. JADE

14³² Tasso rang — wouldn't mind dumping the beam early. (neither would Mark J.) Pluto don't want to — afraid that they might not get another fill before energy saving. We will wait for ≃ ½ hr. or so.

14³⁷ JDAS error 44 Sub. 703 (DL8)

14⁵⁰ Dead time down to 13.6% (INST.), beam pipe voltage 0.8 V

15⁰⁵ Lost beams.

15²⁷ — short break — power supply trouble for PETRA. Synchrotron is down also.

Start again at 19⁰⁰.

16⁰⁰ Zhang, Olsson

21¹⁶ Beams again!

Background high; PKR cannot make it better, BP Level at 1,1

21³⁶ YSPY error forward counters 16,17

23²⁴ Chamber trip

17. 11. 81.

0:00 Hedgecock & Kanzaki on shift.

0⁴¹ Beams back and LUMINOSITY RUN INDICATED. B.P. current is high at 7.2

Bubble 20 removed and it went to 0.9; 00 Run 9252 started. DT. ≤ 20% (AND FALLING)

0⁵⁰ Lead Glass thresholds: "30 mV" ⟹ "35 mV" but dead time ~ 19 %.

0⁵¹ ID TRIP. ANODE CURRENT.

3⁰⁰ DL8's 85, 87 & 89 NO RESPONSE (YSPY) CRATE POWER SUPPLY FAULT (−15 V MISSING) EACH 10 2ND DOWN

← Br. 4, Cr. 6

Change 85 and started a new run.

3³⁰ A new fill is proposed.

3⁵⁹ The beam is lost with no announcement or ID Trip.

4³⁵ New filling ready. Run 9255 started.

6⁴⁵ Stop run 9257. Magnet to 500 A.

7²⁰ Big personnel have arrived to continue work on cabling/sockets.

8⁰⁰ Bamford / Eichler

8⁴⁸ Pillert discovers a waterleak in magnet power house

Temperaturmeasurement at +z for beampipe and TOF counter does not work.

9:20 Magnet fixed start to power up.

Power supply for MM crate on other side of exp. was switched off

9:30 start data taking

10:50 stop run 9259.

11:00 Looking at JET chamber wire map we see an dead wire. Try to close again

13:32 ID trip, beam lost

14:04 New fill ready.

14:10 IBM busy. Call Hochweller. Tasso, Pluto still sending data.

14:16 continue data taking. Reason unknown for hang up

14:47 No triggers. Trigger box was had T1 postpone light on, but no event hanging around (reset event light was off). Pause/continue did not help. Manual "reset event" ~~does~~ made it going again.

14:55 YSPY: FW MM CNTR 16,17 no hits. Touch corresponding cables → work again.

16:00 Takeda & Daniff on shift.

16:48 Stop Run — Run down magnet to 500 A — Energy Saving Time.

19:25 PKR ask us to switch on our magnet although they are injecting.

19:51 ID Trip run paused.

20:09 ID Trip run paused

20:24 YSPY: FW MM Cntr 16,17 no hit. we play with cables as above, but notice that the histograms show a minimum at this point and wonder if this is a statistical problem?

Run	DATE	START	STOP	I^+	I^-	DEAD TIME (%)	TIME (SECS)	RECORDS OUT	ALL TRIGGERS ($\times 10^6$)	TØ RESET ($\times 10^6$)	TØ ACCEPT ($\times 10^6$)	T1 ACCEPT POSTRIG ($\times 10^6$)	T2 ACCEPT	T3 ACCEPT	T2 3TOF 3TR	T2 COLLIN	T2 ≥2TOF LG71 ≥2TR	T1 LG74
9258	17/11/81	9:30	10:48	5.8	7.1	11.3	4618	8002	1202	135	1066	27.7	9850	705	—	5144	2191	2902
9259	"	10:48	11:47	4.8	5.9	7.8	3520	4903	916	71.7	844	15	5338	429	—	3373	1052	1784
9260	"	13:12	13:32	9.4	9.5	19.1	1211	3031	315	60.3	255	10	4292	281	—	1864	1212	1100
9261	"	14:04	15:14	7.8	7.8	18.7	3836	8002	998	186	812	26.5	10885	709	—	4663	3280	2853
9262	"	15:14	16:40	6.0	6.1	9.5	5110	8002	1330	126	1204	24.1	9319	644	—	5429	2172	2986
9263	"	16:40	16:50	5.9	5.9	7.7	621	830	162	12.5	149	2.4	948	60		616	200	311
9264	"	19:48	20:57	7.6	7.6	13.7	3693	8002	1073	139	874	24.0	9989	584	—	4556	2764	3163
9265	"	20:58	22:31	5.8	5.9	8.3	5803	8002	1458	121	1337	22.5	9119	635	—	5473	2028	2910
9266	"	22:32	22:33	5.8	5.8	8.08	42	63	11	0.8	10	0.14	85	4	—	37	19	19
9267	~~18/11~~ 17	22:58	0.08	7.7	7.7	13.9	3909	8002	1016	141	875	26.7	39820	777	—	4747	2430	2783
9268	18/11/81	0:09	1:19	6.4	6.3	10.3	4232	6581	1100	143	987	21.6	8043	535	—	4620	1831	2357
9269	"	1:52	2:53	8.3	8.1	15.8	3611	8002	938	148	790	26.7	10600	732	—	4858	3178	2918
9270	"	2:54	4:13	6.5	6.4	10.1	4927	8002	1228	123	1105	22.7	9194	601	—	5044	2580	3081
9271	"	4:13	9:39	6.0	5.9	7.9	1526	2233	396	81	365	5.5	2435	143	—	1972	617	839
9272	"	5:22	6:20	8.4	8.3	17.0	3447	8002	896	152	743	25.8	10819	727	—	4211	3762	2912
9273	"	6:44	6:57	7.6	7.5	12.3	1605	2965	417	51	366	8.7	3691	224	—	1733	1194	1119
9274	"	13 55	14 27	8.3	8.0	20.0	3084	8002	802	161	642	21.6	11474	852	—	3925	4791	2756
9275	"	14 27	15 30	7.0	6.8	14.3	3660	8002	952	136	816	20.7	10176	906	-	4333	3726	2986
9276	"	15 30	16:43	5.8	5.6	10.5	4764	7194	1084	114	970	18.0	8749	657	—	4398	2957	2663
9277	"	20 24	20 55	9.0	9.0	19.1	856	2135	223	43	180	5.1	2815	210	—	1036	1153	823
9278	"	21 57	22:02	8.4	8.2	22.0	263	759	68	15	53	1.8	1044	84	—	333	510	228
9279	"	23:28	0:39	9.1	10.3	16.1	3477	8002	903	145	758	20.9	10134	870	—	4116	3790	2787
9280	19/11/81	0:39	1:48	7.3	8.38	11.4	4143	7754	1077	122	956	21.6	9126	900	—	4570	2611	2693
9281	"	2:24	3:21	9.5	9.5	14.9	3429	8002	892	133	759	19.8	9624	925	—	4461	2966	2815
9282	"	3:22	4:21	7.74	7.73	10.7	3531	6423	919	98	820	15.8	7437	672	—	4047	2040	2287
9283	"	5:01	5:06	9.6	9.6	28.6	133	~~463~~	~~1035~~ 10	~~25~~ 25	0.8	368	31	—	122	105	120	
9284	"	5:08	6:15	7.5	7.6	13.3	3829	8002	996	132	864	22.7	9627	825	—	4769	2481	4431
9285	"	6:21	6:43	6.8	6.9	9.9	1303	2282	339	34	306	5.9	2436	238	—	1419	537	787
9286	"	11:47	12:14	9.1	9.1	21.9	1868	6656	486	106	380	13.7	6679	620	—	2021	1757	1572
9287	"	12:23	12:24	8.9	8.8	25.8	86	350	22	5.7	16	0.5	220	84	-	83	47	72
9288	"	12:28	13:34	7.2	7.1	12.8	3901	8002	1015	130	886	23.2	9337	924	—	4771	2488	2826
9289	"	13:34	14:12	6.4	6.3	9.8	2254	3934	587	58	529	10.2	4289	450	—	2487	1050	1345
9290	"	15:11	16:12	8.0	8.2	14.1	3629	8002	~~2944~~ 1305	133	811	19.5	9589	888	—	4403	2787	2853
9291	"	16:12	16:16	7.98	8.13	10.8	199	422	57.7	5.6	46.1	0.91	431	44	—	255	112	129

T1 Lumi	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ 5800-25	IBM/TAPE	BEAM PIPE (V)	REJECT EVENT FRACTION (%)	# BHABHA	# MULTI HADRON	BEAM ENERGY (GEV)	TDC	
928	5.73	26.48	5826.73	IBM	0.6	45.5	320	10	17.496		
503	4.56	16.04	5842.77	"	0.55	40.6	231	5	17.491		Beams dumped.
266	7.05	8.53	5582.77 5591.30	"	1.0	50.3	95	3	17.513		Error corrected from page 135 (Lumi). Beam lost
758	6.23	23.89	5615.19	"	0.8	48.6	262	9	17.502		
818	5.14	26.26	5641.45	"	0.6	43.4	333	12	"		
87	4.47	2.78	5644.23	"	0.5	42.4	28	1	"		Run stopped due to Energy Saving Time.
940	7.54	29.34	5673.57	"	1.0	45.9	376	7	17.508		
893	5.12	28.70	5702.27	"	0.5	42.5	335	12	"		
5	4.11	0.17	5702.44	"	0.4	33.0	1	0	—		not a new filling - I drove the lumi before run 9265 ended, not expecting a further run in this filling
779	6.39	24.97	5727.41	"	0.8	45.4	274	11	17.509		New filling (TDC = 1327.5)
655	4.49	21.05	5748.46	"	0.6	44.5	227	10	17.507	1328	
749	6.60	23.84	5772.30	"	0.9	47.9	311	8	"	1327.5	
827	5.64	26.64	5798.94	"	0.7	43.1	353	10	"	1327.5	
231	4.87	7.41	5806.35	"	0.6	46.3	106	1	"		
709	6.70	23.08	5829.43	"	1.1	48.9	273	11	17.507	1327.5	
283	5.19	8.98	5838.41	"	0.65	45.6	111	2	"	1327.5	Beams dumped - Energy Saving + day's holiday.
554	5.68	17.53	5855.94	IBM	0.82	50.3	210	10	17.513	1328	
561	4.97	18.20	5874.14	"	0.64	46.4	240	12	17.507	1329	
540	4.17	17.38	5891.52	"	0.50	44.6	220	7	17.500	1329	Beam dumped.
196	7.06	6.05	5897.57	"	0.9	47.6	63	3	17.507	1328	beam lost
58	6.96	1.83	5899.40	"	0.9	48.1	16	0	17.509	1328	beam lost
710	6.55	22.74	5922.14	"	0.84	46.4	276	10	17.504	1328	
673	5.22	21.62	5943.76	"	0.60	43.7	266	6	17.504	1328	beam dumped
709	6.65	22.80	5966.56	"	0.6	44.7	267	6	17.504	1328	
589	5.34	18.87	5985.43	"	0.5	43.0	243	8	17.498		beams dumped.
30	7.23	0.96	5986.39	"	0.8	20.2	17	0	17.507	1326	no z-vertex rejection (human error)
880	6.12	23.45	6009.84	"	0.6	43.8	263	10	17.504	1326	
229	5.68	7.40	6017.24	"	0.54	39.8	92	3	17.500		Energy saving
427	7.45	13.91	6031.15	"	1.0	25.7	171	7	17.506	1328	no z-vertex rejection (
27	7.17	1.12	6031.77	"	0.7	15.3	11	0	"		
766	6.27	24.47	6056.24	"	0.69	43.7	294	8	17502	1327	
397	5.67	12.78	6069.02	"	0.54	41.0	150	5	17.502	1327	beam dumped
753	6.59	23.91	6092.93	"	0.87	44.5	264	9	17.506	1327	
35	5.63	1.12	6094.05	"	0.6	35.4	76	1	"	1327	beams lost

17-11-81 11:01 LD. trip.
" 11:11 " LD trip "JETCH HIGH CURRENT" "FAULTY PART: 86"
18.11.81 Powe and Nozaki on shift
0.34 JDAS ERROR SUBERROR DO3 (128 1493) appears 6 times but disappeared ~~afterwards~~.
1:12 New fill is ready. BP = 0.9. Deadtime = 21 %.
~~2:16~~ 2:16 Forward TOF ~~3~~ 2 no hits: 15 → look at histog. — looks OK.
~~5:24~~ 5:24 " " " " 18,19 → " " " " (dist" shifted from what it was ② 3·16 ~~3~~ 2 — left peak has longer tail).
6.45 Stop the run. Run down the magnet. German holiday today.

0800 Hedgecock + Minowa
0905 Break — Wasserleck im LINAC 2.
11^10 PKR call; can we reset our magnet. Coils. Found door micro switch not closed. Adjusted and switched back on. Run up to 7500 A shortly after; MAGNETAUSFALL BEI P.A.; back to 5000 A.
13^00 PKR ask us to run up the magnet.
13^35 START Run 9274. BP current indicates 1.2 but with CH20 out this now indicates 0.78 - 0.82
13^40 Plugged in the three forward muon cables 6; 7; 8 (at the T3 trigger logic???) to check whether our old problem has disappeared. It has & histograms are normal. FORWARD TOF no hits 30; 31. histograms look OK.
14:32 ID Trip
If there is a problem with T3 trigger becoming excessive. Please call B. NOROSKA at home during the next shift period.

16^00 Kawabata & Lord
19^00 broken power supply prevent injection.
20^25 new filling
20^53 beams lost

19/11/1981 Glauding / Eichler
1^45 Request new filling
2^18 New filling ready

4:25 request new fill
4:35 set camac clock (clock was 5 min too fast)
5:00 fill ready, start run 9283. No 2-vertex rejection (my fault, was switched off for test)
5:06 stop run 9283 and reestablish proper flags for miproc
5:08 ID-trip
Starting with run 9285 improved version of Miproc-16 program. Events with more than 8 hits/wire are now handled correctly. Before, those events were kept in any case and Miproc flag was set to "illegal hit count".
6:45 beams dumped. We accumulated 118 nb^-1 on this shift

08:00 Matsumura + Petersen
11^00 2 x beam lost shortly after new filling
11^45 new filling
12^10 no 2-vertex rejection for run 9286!

16:00 Ball, Hellenbrand.
16:12 Run 9290 ended. Starts run 9291
16:19 7 mA lost from each beam. ID didn't trip.
We see no luminosity (1 mA left per beam), neither do TASSO and PLUTO. However MARK J do, and want to keep the remnants of this fill until energy-scaning.
16:50 After a minimum of 5 minutes in which the currents (at 17.5 GeV) increased by 2 mA?! energy scaning starts
magnet current → 5000 A.
19:07 Magnet current → 7500 A.
19:25 New filling ready & optimized. Start run 9292.
19:32 ID trip. reset OK.
20:34 End of run 9292. Start run 9293.
21:30 Mark J want new fill. After asking TASSO & PLUTO, decide to refill at 22:15.
23:35 New filling ready. Start run 9295
26:45 ID trip.
Reset OK — then 3 IBM online job error check + bad events structure. Doesn't recur.

20-11-81
0^00 Kawabata Felt on shift
0^00 Lead Glass thresholds: "55 mV" ⇒ "40 mV"
0^00 JDAS error 44/703 : several times. ⇒ check the connection between Crate Controller and Lam Grader ⇒ OK
0^08 IBM Transfer error 54 / 140000. Wait 1 min and start new run. ⇒ O.K.
1^28

Ru	RUN	DATE	START	STOP	I^+	I^-	DEAD TIME (%)	TIME (SECS)	RECORDS OUT	ALL TRIGGERS $\times 10^6$	T0 REJECT $\times 10^6$	T0 ACCEPT $\times 10^6$	T1 ACCEPT + POSTPONE $\times 10^6$	T2 ACCEPT	T3 ACCEPT	T2 3 TOF 3 TR.	T2 COLLN	T2 ≥ 2 TOF LO ≥ 1 $\geq$ 2 TR.	T1 LG $\geq q$
925	9292	19/11/81	19:38	20:35	8.3	8.4	13.4	3846	8002	1001	134	867	20.3	9523	956	–	4515	2187	2858
926	9293	"	20:35	22:10	6.0	6.1	7.5	5705	8002	1484	111.9	1372	18.2	8566	762	–	5435	1541	2776
927	9294		22:11	22:14	5.9	6.1	5.4	186	234	48.2	2.6	45.6	0.5	207	25	–	141	29	71
928	9295	"	23:39	0 47	7.5	7.8	13.5	3963	8002	1030	138.9	891.	23.4	9220	899	–	4740	2068	2764
929	9296	20/11/81	0 48	1 22	6.8	7.0	9.6	2031	3445	527.6	50.9	476.7	9.4	3772	370	–	2187	858	1204
930	9297	"	1 24	1 34	6.6	6.8	8.6	588	965	152.7	13.2	139.5	2.5	988	106	–	596	226	329
931	9298																		
932	9299		No output due to IBM transfer error.																
933	9300								3269										
934	9301	"	1 47	2 37	5.7	5.9	7.5	2414	~~627~~	627.5	47.2	580.3	8.8	3632	289	–	2350	711	1229
935	9302	"	Test run ~~to~~ for IBM linkage.																
936	9303	"	3 01	4 00	7.9	7.8	13.3	3473	7393	903.1	120.1	782.9	21.6	8376	839	–	4063	2272	2683
937	9304	"	4 05	4 12	7.6	7.5	10.8	311	557	80.7	8.7	72.0	1.6	625	56	–	316	183	203
938	9305	"	No output due to LG power problem.																
939	9306	"	4 48	4 58	6.6	6.4	8.6	533	892	138.6	12.0	126.6	2.2	894	81	–	568	221	316
940	9307	"	5 00	5 13	6.3	6.2	8.3	766	1145	199.2	16.6	182.6	3.0	1249	121	–	743	281	442
941	9308	"	5 43	6 47	7.8	7.5	13.6	3082	6578	801	108	693	18.2	7397	748	–	3655	2001	2349
942	9309	20/11/81	9:33	9:33															
943	9310	"	9 38	10 45	7.2	7.5	12.8	3995	8002	1039	133	907	22.8	9164	923	–	4405	2726	2874
944	9311	"	10 46	12 15	5.5	5.9	8.1	5350	8002	1392	113	1279	19.4	8559	768	–	5084	2236	2900
945	9312	"	12 15	12 29	5.3	5.7	6.7	802	1040	209	14.1	~~1946~~ ~~533~~	2.33	1130	92	–	755	254	376
946	9313	"	13 09	13 35	5.7	6.0	13.5	943	1782	245	33.1	212	5.19	2254	240	–	1187	364	1007
947	9314	"	1336	1339	5.6	5.9	7.8	~~417~~	~~221~~	~~43.3~~	~~3.4~~	40.0	0.72	282	22	–	182	18	50
948	9315	"	14:19	14:59	7.6	7.8	13.4	2217	4535	577	77.1	499	11.9	5502	488	–	2665	1627	1607
949	9316	"	14:59	16:17	5.9	6.1	0.0	0	24	0	0	0	0	0	0	–	8	3	3
950	9317	"	16:19	16:31	2.6	2.4	3.5	138	109	35.9	1.26	12.6	0.173	100	10	–	64	20	40
951	9318	"	19:50	20:48	7.7	7.7	15.6	3455	8002	898.8	140.20	758.6	22.87	9815	981	–	4211	3083	2799
952	9319	"	20:48	22:12	5.8	5.9	8.8	5026	7733	1307	115	1192	21.2	8702	789	–	5088	2105	2818
953	9320	"	23:37	01:09	6.6	6.6	12.3	4474	8002	1163	143	1020	23.7	9455	975	–	5017	2306	6808
954	9321	"	01:09	01:43	6.0	6.0	8.6	2053	3027	534	45.9	488	8.9	3530	331	–	274	738	1062
955	9322	"	02:11	03:12	8.0	8.2	14.4	3629	8002	944	135	809	23.5	9094	1100	–	4446	2284	2862
956	9323	"	03:13	04:33	6.4	6.6	10.3	4781	8002	1244	128	1116	23.3	8711	983	–	5051	1942	2862
957	9324	"	04:35	05:33	5.5	5.7	7.2	3431	4522	893	64	829	12.7	4904	525	–	3210	948	1589
958	9325	"	06:17	07:23	7.9	7.5	12.8	3864	8002	1006	128	877	23.5	8884	1034	–	4555	2294	3614

T0 LUMI	<L> $\times 10^{30}$	$\int$Ldt RUN	$\int$Ldt 6094.05	IBM / TAPE	BEAM PIPE (V)	REJECT EVENT FRACTION (%)	# BHABHA	# MULTI HADRON	BEAM ENERGY (GeV)	TDC 85	
762	6.31	24.26	6118.81	IBM	1.0	44.3	314	7	17.518	1328	
833	4.66	26.61	6144.92	"	0.75	39.7	308	8	17.496	1327	
21	8.69	0.69	6145.61	"	0.4	36.1	9	0	"	1327	beams dumped.
881.	7.16	28.38	6173.99	"	0.95	43.4	357	8	17.506	1327	
354.	5.55	11.27	6185.26	"	0.60	41.0	150	4	17.506	1327	
95	5.27	3.10	6188.36	"	0.52	38.1	45	0	17.504		
				~~T11/114~~	~~0.48~~						
333	4.44	10.73	6199.09	T11/114	0.48	41.6	123	2	17.504	1327	Beams dumped
					~~0.90~~						
781	7.20	25.01	6224.10	IBM	0.90	43.2	299	5	17.506	1327	
53	5.50	1.71	6225.81	"	0.6	42.3	12	1	17.506		
78	4.62	2.46	6228.27	"	0.55	36.6	36	0	17.505		
110	4.62	3.54	6231.81	"	0.50	42.0	67	2	17.504	1327	Beams dumped.
624	6.50	20.03	6251.84	"	0.9	43.0	278	5	17.506	1327	Beam dumped
				"	0.85						Run terminated immediately due to ID trip during LG pedestal.
859	6.86	27.40	6279.24	IBM	0.75	43.6	325	15	17.502	1327	
902	5.42	29.02	6308.26	"	0.55	40.6	338	11	"	1327	
102	4.14	3.32	6311.58	"	0.35	40.2	35	1	"	1326	Beams dumped
1040	7.66	32.3	6318.81	"		44.6	76	1	"		
26	5.13	0.86	6319.67	"		42.1	4	0	"		
448	6.51	14.43	6334.10	"		45.0	~~178~~ 8	2	17.500		
1	0.0	0.0	6334.10	"		0.0	1	0	17.497	–	
6	1.63	0.23	6334.33	"		31.9	7	0	17.500	–	
736	6.85	23.68	6358.01	"	1.2	45.7	260	8	17.504	1327	
728	4.68	23.51	6381.52	"	0.6	42.1	292	8	17.504	1327	beams dumped
1047	4.70	21.01	6402.53	"	0.7	42.9	259	10	17.514	1327	
252	3.99	8.19	6410.72	"	0.55	42.9	98	2	"	1328	beams dumped
808	7.12	25.84	6436.56	"	0.75	43.8	321	~~16~~	17.511	1326	plenty of MH's!
790	5.33	25.48	6462.04	"	0.55	41.5	309	7	"	1327	
431	4.01	13.76	6475.80	"		40.9	154	5	"		beams dumped
983	7.28	28.13	6703.93	"	0.65	42.8	348	11	"	1326	
								3062			

20-11-81

1.40 Again IBM Transfer error. Try to link IBM several times but no success.
1.46 Start Run 9301, using Magtape, "F11/114".
2.30 Beams dumped.
3.05 New filling ready. Start Run9303.
3.33 JDAS error 44/5084. halted.
4.10 Suddenly data taking [illegible]. "NO EVENTS SEC"
2 [illegible]" LG HV-power supplies were down. Sockets on the socket-board was broken.
We plugged the cables into other sakets.
5.17 Beams dumped.
5.40 new filling ready
5.58 ID trip
6.03 " " but beam pipe meter is stable 0.65V
6.15 " "
6.45 energy saving

8.00 Glendinning + Minowa
9.00 PkR ask us to run up our magnet.
9.35 background too bad to start ask PkR to optimize – then start run and ID trips within seconds – PkR optimize again. Run 9309 has only 6 events!
9.40 Run 9410 going OK.
12.30 request PKR new fill.
13.40 " , because they lost the beams partly so often.
14.10 ~~ID cannot be switched on, whenever the switch is pressed on, many kind of errors show up. call expert.~~
~15.30 HV supplies of lead glass counters down due to a AC-line failure.

16:00 Bartel and Odaka on shift

16:20 HV supplies of LG were fixed.
:30 Nearly a half of Beam was lost, and then it was dumped.
Energy Saving Time
19:25 Background optimization
19:50 The background signal from the beam pipe counters has a different reading now probably the gain of the main amplifier has changed, or the HV on the counters has changed due to the lead glass HV-foldels.

The high reading is not due to a single noisy counter!
We started a run with a reading of 1.2V. The chamber is quiet and the anode current for ring #2 does not exceed .7 in histogram #26, which according to the experts is a reasonable value for the chamber.
20:00 LG thresholds were adjusted. 55mV

20:15 Set HV for beam pipe counters with NAR-program the ~~readout~~ current went down to 0.75V from ~ 0.8V.
It seems as if the average beam pipe current went up.
Events are very clean so we will accept higher BP-currents

20:45 The std. histograms for run 9318 look ok also for BP.
23:00 New fill ready problem with lead glass HV
~~23:10 One power supp~~ problem is with HV mainframe
23:36 Problem solved start run
23:51 ID trip

21/11/81
00:00 Dittmann + Bowdery on shift

01:45 Beams dumped
02:00 New fill ready
03:38 Tagging LG histograms appear to be different from usual. ENERGY LUMI +Z e−Z do not appear to be symmetric. Beam conditions? We will take no action at this stage.
Obs: RL value on colour TV is wrong! (T_{00} low)
07:38 A quiet shift..... plenty of beam + MH's $\int_{shift} L\,dt \approx 116\ nb^{-1}$ Beat that!
OK. we did!
in the next shift too!

08:00 Darvill & Yamada on shift.
09:00 new fill ready ← STD histogram
09:44 ID trip
09:50 Tagging LG. histograms seem to be O.K. now – perhaps the problem was with beam conditions.
10:40 the luminosity seems to be falling rapidly and so we call round the other groups to see what they feel about another filling.
11:20 NEW fill ready
13:30 dump beam
13:48 New fill ready
14:20 ID trip

RUN	DATE	START	STOP	I^+	I^-	DEAD TIME (%)	TIME (secs)	RECORDS OUT	ALL TRIGGERS $\times 10^6$	TØ REJECT $\times 10^6$	TØ ACCEPT $\times 10^6$	T1 ACCEPT ≥ 1 POST PIPE $\times 10^6$	T2 ACCEPT	T3 ACCEPT	T2 ITOF 3TR	T2 COSMIC	T2 ≥2TOF LG>1 ≥2TR	T1 LG>4
9326	21-11-81	07:24	08:37	6.5	6.1	90	4378	7050	1140	102.3	1037	19.6	7534	802	—	4560	1692	2587
9327	--	09:13	10:22	7.1	7.5	11.9	3997	8002	1041	124	917	20.9	8676	907		4451	2318	2895
9328	"	10:23	10:57	6.4	6.8	8.6	2021	3027	526	45.5	480.5	7.3	3431	273	—	1959	903	1125
9329	"	11:26	12:32	7.4	7.8	12.8	3825	8002	996	127.5	868	21.0	9031	890		4295	2566	2950
9330	--	12:32	13:26	6.1	6.5	8.0	3219	4758	838	67.1	771	11.0	5191	484		2942	1373	1829
9331	--	13:45	14:48	7.8	8.9	14.3	3638	8002	967	135	812	22.0	8969	1012		4172	2562	2787
9332	--	14:48	15:47	6.6	6.8	9.4	3228	5499	840	79	761	13.5	5827	500		3168	1474	2071
9333	"	16:09	17:11	7.7	8.0	13.7	3708	8002	965	132	833	24.9	8995	1026		4342	2572	2842
9334	"	17:12	18:07	6.0	6.4	8.8	3273	5303	851	78	773	13.1	5535	688		3247	1819	2040
9335	"	18:29	19:29	7.4	7.9	13.9	3628	8002	944	132	812	24.7	9198	998		4365	2608	2901
9336	"	19:30	20:22	6.0	6.5	9.0	3122	5081	812	73	739	13.9	5330	469		3183	1301	1899
9337	"			9.1	8.6			585										
9338	"	22:31	23:36	8.0	7.9	14.2	3614	8002	940	133	807	26.1	9038	1087		4347	2372	2794
9339	22.11.81	23:37	0:55	6.4	6.3	10.0	4666	8002	1213	121.	1092	25.1	8570	976		4980	1849	2876
9340	"	0:55	1:27	5.8	5.7	7.6	1899	2738	494	38	456	6.7	2792	289		1758	578	1003
9341	"	1:59	3:15	7.1	7.1	10.1	4537	8002	1180	120	1061	18.5	8714	748		4571	2482	2982
9342	"	3:15	4:07	5.7	5.8	7.1	3104	4282	808	58	750	8.2	4598	297		2660	1269	1592
9343	"	4:29	6:09	6.4	6.7	10.4	4652	8002	1211	126	1085	20.6	9312	799	—	4839	2621	2898
9344	"	6:09	6:23	6.1	6.4	7.7	818	1189	213	16	196	2.7	1285	104	—	755	322	451
9345	"	7:06	7:08	9.4	9.7	19.6	95	257	25	5	20	0.5	283	21	—	119	86	~~8685~~ 73
9346	"	7:19	8:38	6.4	6.7	11.1	4573	8002	1190	132	106	19.2	8779	811	—	4690	2489	2965
9347	22/11/81	8:38	8:57	6.0	6.4	7.2	1097	1495	285.7	20.4	265.3	3.5	1607	129	—	1022	344	523
9348	22/11/81	9:43	10:48	7.5	7.8	12.3	3898	8002	1014	124	890	20.3	3651	890	—	4406	2321	2865
9349	"	10:48	11:44	6.4	6.7	10.4	3260	5232	848	88	760	12.3	5478	485	-	3190	1348	1972
9350	"	11:44	12:14	5.7	6.2	7.6	1747	2793	455	34	420	5,6	2641	246	-	1583	693	887
9351	"	13:43	13:56	7.1	6.8	10.4	4404	8002	1146	119	1027	20.5	8732	858	—	4800	2232	9844
9352	"	13:57	14:30	6.4	6.2	7.8	1467	2960	512	39.9	472	6.8	3041 1884	273 1692	-	1887	632	1134
9353	"	15 29	16 41	6.9	7.1	12.3	4270	8002	1110	136	974	20.7	8983	880	—	4719	2293	2835
9354	"	16 42	17 24	5.7	6.0	7.7	2587	3827	673	51.6	621	8.4	3980	336	—	2477	945	1352
9355	"	18 30	19 34	7.3	7.7	12.9	4012	8002	1043	134	909	22.3	9676	869	-	4401	2867	2922
9356	"	19 34	21 00	5.2	5.7	7.9	5115	7390	1330	105	1225	17.2	8297	594	-	4892	2774	2764
9357	"	21 44	22 57 23/11/81	7.1	7.6	12.5	4006	8002	1092	130	962	23.5	9367	899	—	4503	2699	2825
9358	"	22 57	00 27	5.1	5.6	8.3	5384	7894	1401	116	1284	19.5	8448	739		5053	2058	3030
9359	23/11/81	00 49	2:02	7.2	7.6	12.0	4062	8002	1056	126	930	21,3	8749	925	—	4592	2182	2939

T1 LUMI	<L> $\times 10^{30}$	$\int L dt$ RUN	$\int L dt$ 6703.93	IBM / TAPE	BEAM PIPE (V)	REJECT EVENT FRACTION (%)	# BUNCHES	# MULTI HADRON	BEAM ENERGY (GeV)	TDC 55	
735	5.42	23.72	6727.65	IBM	0.45	40.9	304	8	17.511	—	Beams dumped 8:40
904	7.31	29.21	6756.86	--	0.7	41.9	356	6	17.502	1327	we got some multihadronic events Kielce!
286	4.58	9.27	6766.13	"	0.45	42.3	105	4	17.500	1326	beam dump.
802	6.70	25.63	6791.76	--	0.8	43.0	324	8	17.500	1326	
496	5.01	16.13	6807.89	--	0.45	41.5	214	8	17.580	1326	beam dumped 13:30
860	7.61	27.69	6835.58	"	0.85	42.9	333	9	17.508	1326	
595	5.95	19.19	6854.77	"	0.5	39.1	265	9	17.504	1326.5	beam dumped 15:45
827	7.16	26.56	6881.33	"	0.8	43.1	326	15	17.504		
584	5.78	18.93	6900.26	"	0.5	40.0	236	6	17.496	1326	
780	6.92	25.10	6925.36	"	0.9	43.8	343	7	17.503	132615	
547	5.66	17.67	6953.03	"	0.5	39.8	210	9	17.496	1327	
	4.84	1.59	6954.62	"							beam lost
804	7.18	25.96	6980.58	"	0.8	43.2	309	13	17.511	1327	
805	5.54	25.83	7006.41	"	0.6	41.0	273	10	17.496	1327	
298	5.07	9.62	7016.03	"	0.45	39.2	115	1	17.496	1327	beams dumped.
906	6.43	29.17	7045.20	"	0.76	41.6	344	13	17.497	1326	
487	5.10	15.82	7061.02	"	0.49	40.2	184	3	17.497	1326	beams dumped.
281	5.37	24.96	7085.98	"	0.70	43.5	291	6	17.496	1326	
106	4.20	3.44	7089.42	"	0.40	40.3	50	3	17.496	1326	beams dumped.
~~825~~ 21	-7.76	-0.74	7090.16	"	0.70	39.7	7	0	17.513		
822	5,70	26,08	7116.24	"	0.65	41,8	300	10	17.499	1326	
175	5.17	5.65	7121.89	IBM	0,38	40.2	62	1	17.499	1326	Beams dumped.
912	7.52	29.30	7151.19	"	0.70	41.6	366	16	17.507	1327	
564	5.62	18.31	7169.50	"	0.50	40.0	247	6	17.506	1326	
264	4.84	8,46	7177.96	"	0.40	39.9	97	3	- " -	1325	Beams dumped.
844	6.20	27,98	7205.24	"	0,75	41.4	350	8	"	1327	
323	5.28	10.39	7215.63	"	0.6	39.5	128	2	17.501	1327	Beams dumped.
835	6.33	27.05	7242.68	"	0.6	42.7	360	13	17.495	1327	
435	5.41	13.99	7256.67	"	0.43	39.9	162	4	17.493	1327	Run stopped IBM error 54 Beams dumped
720	5.83	23.40	7280.07	"	.75	45.2	282	7	17.508	1327	
686	4.34	22.20	7302.27	"	0.46	41.7	250	3	17.497	1327	Beams Dumped.
720	6.24	24.98	7327.25	"	0.76	44.0	289	9	17.508	1327	
760	4.52	24.35	7351.60	"	0.98	40.7	287	14	17.524	1327	Beams dumped.
812	6.31	25,94	7377.54	"	0.8	42.1	365	12	17.514	1326	
								(3300)			

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16:00 Nozaki + Heinzelmann

16:00 - 21:00 PETRA runs very well. Short filling times ~ 20 min.

21:10 JOBS ERR 46 PUBERROR 0 TASK1 . NOTHING MOVES ANYMORE. RELOAD NORD

DURING RELOAD BEAMS LOST

22:30 New fill ready

22.11.81.

0:00 Kawabata & Kanzaki on shift

1:30 Beams dumped.

2:00 New filling. Run 9341 starts.

4:15 Beams dumped.

4:52 New filling ready. Run 9343 starts.

5:07 ID trip.

5:55 HV WRONG. YVOLTS : TAG MFR = 63 CH = 25 HV = 1.474 SHOULD BE = 1.468
26 1.506 1.500

The difference was not so large. We ignored them.

6:14 HV WRONG. " " TOO MANY WRONG CHANNELS !!

All channels have a slightly higher H.V. values.

6:25 FW-TOF No hits. 30.31.

6:26 Beams dumped.

7:00 New filling ready. but TV says "BACKGROUND OPTIMIZATION" for about 10 min.

We call to PKR. They say that they are trying to get higher luminosity and the beam condition won't change so much. We start Run 9345.

7:08 ID trip. By the request of PKR we switch off HV.

7:30 Switch on HV and start Run 9346. Lead Glass thresholds = "50mV" → "55mV"

7:36 ID trip.

8:00 Oberon + Bamford on shift.

8:38 stat run 9347

8:55 Beams dumped.

9:40 Beams up again

10:55 Stat run 9349.

11:30 Tagging H.V. error message occurs, again the difference is only small so we ignore it.

11:40 Run 9349 suddenly no events etc. We find no reason and stop the run. With R 9350, problem gone (!?)

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14:35 Beam dumped.

15:30 From time to time, Tag voltage is reported wrong. Differences are small but irritating. what's going on?

15:50 10M beep then down then up again in the space of 30 seconds.

16:00

COLOS & HEDGECOCK.

18:25 new filling

21:45 New filling.

22:58 : MUON CRATES 4 & 9 MISSING. RESET.

22:58 TAGGING HV ERRORS — DIFFERENCE TOO SMALL TO WORRY ABOUT.

23.11.81

00:00 Ball, Kobayashi on shift.

We arrange new fill for 00:30.

00:27 Stop run 9358 + dump beams for new fill.

~~00:57~~

00:49 New fill ready (22 mins). Start run 9359.

00:57 ID trip. Reset OK.

02:00 All TAG H.V. readings on MFR6 have gone to zero according to YVOLTS.

Check manually — they do all read zero. Follow procedure in JOBS folder for resetting whole mainframe.

Doesn't work. Phone Henning Wriedt. Suggests using NAR TOF program. Doesn't work. Henning coming.

— we go on taking data. Run 9360.

Wriedt finds, we had, after all, reset the mainframe using program!

03:21 YSPY : fons. p. entr. 17 no hits — looks ok on bitmap.

03:31 Request new filling for 04:00. Aim to keep next fill until energy-saving.

04:00 Stop run 9360. Dump beams for new fill.

04:55 New fill ready. Run 9361

06:06 End of run 9361. Start 9362.

06:40 Stop run 9362. Dump beams. Magnet current → 500A.

08:00 Meier and Bowdery take the chair.....

08:45 PKR asked us to switch on the magnet

08:48 We reached ~ 6800 A → PETRA beams became unstable → we had to run down to 5000 A.

09:07 Magnet now at 7500 A

Run	Date	Start	Stop	I^+	I^-	Dead time (%)	Time (secs)	Records out	All triggers $\times 10^6$	Tϕ reject $\times 10^6$	Tϕ accept $\times 10^6$	T1 accept + festival $\times 10^6$	T2 accept	T3 accept	T2 3 TOF 3 TR	T2 coll'n	T2 $\geq$ 2 TOF LG>1 $\geq$ 2 TR	T1 LG74
9360	23/11/81	02:10	03:57	4.6	5.1	6.2	6451	7996	1679	105	1574	16.8	8239	648	—	5507	1669	3046
9361	"	04:58	06:06	7.6	8.1	12.5	3900	8002	1015	127	889	22.6	8746	1004	—	4396	2334	2867
9362	"	6:07	6:40	6.9	7.4	9.8	2012	3379	524	51	472	9.5	3634	361	-	2109	848	1232
9363	"	9:11	10:03	7.2	7.5	13.8	2767	5727	720	99	621	15.6	5632	655	-	3177	1776	1970
9364	Loo	IBM	tape												—			
9365	23/11/81	11:12	12:11	7.9	8.0	14.4	3516	8002	915	131	783	18.5	9363	1063	—	4599	2475	2850
9366	"	12:11	13:30	6.0	6.1	9.5	4722	8002	1229	117	1112	17.7	8973	819	-	5122	2128	2919
9367	"	13:31	13:39	5.8	5.9	7.3	470	697	122	8.9	113	1.3	702	66	—	460	151	250
9368	"	14:18	14:55	8.4	8.7	16.8	2203	5315	574	96	478	12.7	6451	784	-	2543	2186	1824
9369	"	14:57	15:05	8.1	8.4	14.8	449	1245	116	17	99	2.1	1187	103	-	501	348	331
9370	"	15:09	15:54	7.5	7.6	11.4	2713	5160	706	81	625	11.5	6079	565	-	3019	1769	1752
9371	"	16:03	16:45	5.9	5.8	5.7	2327	2526	606	35	431	4.3	2873	199	-	1954	491	942
9372	"																	
9374	"	20 09	21 12	8.9	8.9	12.5	3789	8002	986	124	862	17.0	8929	1311	-	4700	2207	2577
9375	"	21 13	21 16	7.3	7.4	10.0	130	272	34	3	30	0.5	245	38	-	152	55	98
9376	"	22 02	22 53	9.7	9.8	17.1	3016	8002	785	134	651	16.7	9263	1449	-	3971	2525	2548
9377	"	22 53	23 57	8.1	8.3	11.1	3857	7769	1003	112	891	16.5	8141	1459	-	4565	1940	2471
9378	24.11.81	0.58	1.55	7.7	7.9	13.0	2287	6958	855	111	744	17.1	7450	969	—	3944	1772	2419
9379	"	1.53	3.14	6.11	6.26	9.0	4826	8002	1256	113	1142	19.3	8462	978	—	5329	1641	2818
9380	"	3.15	3.18	6.0	6.2	7.3	169	222	44	3.2	40.8	0.56	257	16	-	178	38	81
9381	"	3.56	5.03	9.17	9.36	13.8	4014	8002	1045	144	901	19.4	8761	1033	—	4745	1831	2757
9382	"	5.03	6.33	5.8	5.9	8.1	5318	8002	1384	113	1272	18.8	8658	906	-	5456	1530	2811
9383	"	6.33	6.41	5.7	5.8	6.5	453	574	118	7.7	110	1.34	634	57	—	442	109	175
9383	ID	Pulse test runs, written to tape																
9384																		
9386	24.11.81	09:16	10:21	7.9	8.1	12.3	3879	8002	1009	124	884	21.8	8645	1164		4726	1708	2711
9387	"	10 21	11 28	6.1	6.3	8.0	4481	6758	1166	93.7	1072	15.1	6988	695	-	4520	1254	2377
9388	"	12 31	13 31	7.7	8.3	14.5	3589	8002	934	135	798	20.4	9700	1077	-	4423	2050	2711
9389	"	13 32	14 07	6.8	7.5	9.6	2112	3776	549	52.7	497	8.6	3880	487	-	2310	850	1258
9390	"	16:16	16:48	8.3	8.9	14.8	1591	3593	414	61.3	353	9.7	4026	480	-	2002	880	1743
9391	"	19:44	20:18	8.3	8.5	12.8	1696	3636	441	56.4	385	8.7	3848	488	—	2096	859	1230
9392	25.11.81	2 07	3 20	7.1	7.3	11.0	4326	8002	1126	123.4	1003	21.3	8561	1125	—	4731	1745	2538
9393	"	3 19	4 14	6.2	6.3	8.4	3194	4850	831	69.6	762	12.8	5233	592	—	3344	911	1644

T1 Lumi	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ 7337.54	IBM / Tape	Beam Pipe (V)	Reject Evgtt Fraction (%)	# Bhabha	# Mult Hadron (T02)	Beam Energy (GeV)	TX 85.	
796	3.99	25.75	7403.29	IBM	0.4	38.8	340	10	17.492	1326	beams dumped.
802	6.60	25.76	7429.05	"	0.85	42.0	317	10	17.509	1326	
335	5.37	10.81	7439.86	"	0.5	40.9	104	6	17.517	1326	beams dumped
615	7.15	19.79	7459.65	"	0.9	43.6	225	7	17.510	1328	
											beams dumped
761	6.97	24.52	7484.17	"	0.8	44.4	298	9	17.508	1328	
818	5.59	26.41	7510.58	"	0.5	42.3	330	13	17.496	1327	
72	5.02	2.36	7512.94	"	0.3	38.2	20	0	17.495	1327	
485	7.08	15.59	7528.53	"	0.85	45.7	163	7	17.505	1325	Run was terminated because of T2 trigger failure (overwritten constants) MIPROC rejection wrong ⇒ we stop run (Ralph changes prog)
89	6.42	2.88	7531.41	"	0.55	28.9	37	3	"		
486	5.75	15.60	7547.01	"	0.50	43.7	181	4	17.505	1326	
231	3.24	7.55	7554.56	"	0.35	41.9	94	2	17.505	1326	
					0.7						μP no response
704	6.10	23.11	7577.67	"	0.7	42.5	294	10	17.509	1327	
24	6.05	0.79	7578.46	"	0.48	33.8	9	1	17.509		beams lost (21:20)
661	7.04	21.23	7599.69	"	.9	44.2	256	8	17.513	1326	
658	5.57	21.48	7621.17	"	0.6	40.8	260	8	17.513	1326	beams dumped.
708	6.93	22.78	7643.95	"	.8	41.5	281	13	17.507	1327	
809	5.47	26.40	7670.35	"	.6	40.5	367	8	17.507	1326.5	
21	0.69	4.07	7674.42	"	.4	43.1	5	0	17.507		beam dumped
816	6.47	25.96	7697.00	"	0.7	41.7	333	8	17.509	1327	
790	4.88	25.45	7722.95	"	0.5	40.0	304	6	17.507	1327	
54	3.94	1.79	7724.74	"	.35	39.3	16	0	17.507		Run ended. 06-45
916	7.62	29.56	7754.30	IBM	0.9	42.0	370	11		1328	
811	5.84	26.19	7780.49	"	0.5	39.5	308	10	17.498	1328	Beams dumped
839	7.47	26.81	7807.30		0.8	45.7	329	10	17.503	1328	
405	6.18	13.06	7830.36		?	39.2	154	4	17.503		Beams lost
438	8.02	12.77	7843.13	IBM	0.75	42.9	155	2	17.509	1328	beams dumped - energy sensing trim.
402	7.44	12.96	7856.09	"	0.8	41.3	160	7	17.508	1328	
960	7.02	30.39	7886.48	"	0.8	41.5	413	11	17.504	1328	
513	5.13	16.40	7902.88	"	0.6	40.7	233	9	"	1328	beams dumped
								7492			

9:20 Run paused for Background Opt.
10:03 IBM - Problems, Re-linking not possible → Run 9363 stopped
10:04 ID-Trip
10:09 After phoning Computer-Center we tried to link the IBM again → not possible (no events in Run 9364)
10:09 PLUTO has IBM-trouble too
10:10 ID-Trip (PETRA started optimizing without message!)
10:14 IBM-AA is down, Computer-Center promised to solve all problems within 10 min.
10:22 PKR stopped optimizing, Background is high, Beam-Current low
10:30 All Experiments agreed to have a new filling → Beams dumped
10:52 'IBM BUSY' still on Color-TV although AA is up again and JADE-Online-Job is running. The message 'IBM ERROR 54' vanished after reloading the WORD 50.
11:11 Run 9365 started, IBM o.k.
11:46 Tagging HV errors, differences 10-20V
13:03 V50 Histograms checked
13:32 All experiments agreed to refill in 15 min.

Tomorrow, 24/11/81 Access from 7.00 to 8.00

14:55 No T2 triggers because the constants have been corrupted. We start a new run. Ralph Eichler is here modifying the HIPROC program.
15:42 ID-Trip (2x), Background on BP-Meter seems stable
16^{00} J. Kawzaki + A. Wagner
16^{02} Part of beams lost, ID trip; no more triggers after restart. (4 mA on 4 mA)
16^{20} beam current jumps mysteriously back to 6 mA/6 mA
PKR gives explanation: bunch-marker had jumped by ~ 50 ns
this bunch marker controls: - feedback system
- beam current measurement
- our trigger
So, what happened, was: bunch marker jumped, ⇒ feedback came at wrong time ⇒ partial beam loss ⇒ chamber trip ⇒ Tφ out of sync → no more triggers

Further message from PKR: Quad in transport line defect. Not clear if restart at 19^{h}.

16^{43} Many TAG HV errors. But difference is very small. H. Wriedt informed, he will come
16^{45} Start of energy saving time. Go down magnet current to 500A.
18.05 TAG-HV look totally normal (despite previous error messages).
To all people on shift: please ignore error-messages for TAG-HV if the HV-difference is below 25V for the time being. I am still watching this bug. HW
19^{00} Magnet current → 7500A
20^{09} finally ready for data taking. We had 2 problems: 1) µP no response → reload
2) flat cable to T2 mask box on Rucksack was inserted wrongly (by H. Matsumura + RAE) during last 2 hours. Call RAE who traces problem "per Telephon seelsorge". Now ok.
21^{20} Magnet fluctuation (~ 7494A) and No Triggers. → Adjust 7500A.
But then they lost the beams.
22^{00} New fill ready

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0^{00} Stephens + Heuer
1:04 L6 thresholds ok
1:30 Old histograms look ok
4.15 Standard Histograms look ok.
Several time outs in Crate 703, usually "adjusting cables"

6.45 Datalow switched off magnet ramp down to 500amps

7^{00}–8^{00} ID-Pulser-runs

08:00 Ball, L. + Allison Heinzelmann on shift.
09:00 Magnet → 7500A.
09:15 New fill ready.
10:20 End of run 9386, start 9387.
10^{45} I.D. trip. Beams look ok. I.D. reset & run ~~restarted~~ continued.
11^{40} End of run 9387, Beams dumped. Magnet fluctuation.
12:30 New fill ready. Start 9388
14^{11} Beams lost. I.D. trip. (14^{00} T.V. display lost).
14^{23} Trouble with PETRA magnet interlock.
15^{57} Magnet fluctuation

16:00 Bartel & Darrall on shift.
16:16 New filling ready and we start run 9390
16:28 ID trip due to excessive loss of a fraction of the beam
16:42 Run 9390 ended 'Energy Saving Time'
magnet ramped down to 1000

For Ralph: By chance I discovered following error: When all TDC's are on (testpulse) Mipror A99 gives JDAS ERROR 63 Suberror 27.

19:02 PKR call to ask us to wind our magnet back up.
1:48 New fill ready and we start run 9391
20:18 One lightning flash killed the data acquisition.
Chamber alarm, gold plotter started plotting, error messages on the TTY
beams lost, Synchrotron down, PKR-computer down, several
'Emergalarm Melder' on the DESY site went on etc.
We spent a longer period without beams
ramp down the magnet to 1000 A.
Reload JDAS-system starting at Level E of the JDAS manual
23:45 Problems with Petra feedback system. Destroyed by lightning flash.
Experts have been called for repair

24th Barloco & Cords on shift.

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1:50 new filling
5:08 new filling
5:45 Snow starts to fall...
6:50 Beams dumped. Magnet current 16 500A

8:00 Warming and Odaka on shift.
9:07 Beams are ready. We powered up the magnet.
:09 Beams were lost.
:14 The magnet current is 7500A.
:43 New fill.
:47 Beam pipe current is still high (~1.0), but we trigged to switch on the I.D.
The anode current is not high, and stable. we started a data taking. (Run 9396)
:53 LG thresholds were adjusted. 50mV. (previous value: 55mV)
10:07 " again. 40mV

11:00 message "no events for x seconds" appears, PAUSE/CONTINUE cures the hang up
12:00 bunch marker has jumped, partial beam loss, ID trip
we ask for a new fill at 12:10
12:10 problems with display: F08 (display of YHMON) gives answer "display busy - wait 20sec"
but display is not busy (maybe the last event display was not finished due to
ID trip - PAUSE - STOP)
we restart JDAS at Level B → now display works ok
13:06 Beams are ready. → The message on TV ~~was change~~ turned to 'BACKGROUND OPTIMIZATION'.
13:40 Data taking started, but we got no trigger.

If you wonder that no triggers come during run, go to the trigger box
If the big white lamp in the pushbutton is on, ~~then~~ the Nord is in trouble
If the small red LED "Sync time-out" is flickering, complain at PKR
that their bunch-clock is wrong ("Bunch-Uhr", "Bunch Marker")
→ If this, our sync pulse comes falls not properly within its gate.
After correction, check the YHMON Histo. No 1
It shows the time difference between Prepulse (TP) and our Sync (beam pickup).

13:59 Run 9402 started
15:30 Beams dumped.
16:00 Clarke & Kobayashi on shift
21:45 Message 'ID-TRIP Φ' on line printer. We found no alarms on ID, and event displays looked all right. We stopped the run, but the message were still printed on L.P. → Restart NORD. OK!

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0:00 Minowa and Riesberg on shift.

0:13 New filling ready
Run # 9409 started
0:30 YHMON sampling: In Test TDC 4 (Pick-up at +z-side) there are two peaks, one at 103.5 ~~counts~~ and another at 104.6 (normal peak).
1:35 In Run # 9410 YHMON Test TDC4 is normal again
3:30 We have requested a new fill. Stop Run 9411 for beam dumps. Luminosity still 4.2×10^{30}!
Note: During this fill the indicated Energy shifted from 17.512 (at the beginning) down to 17.493 GeV *)
3:52 New fill ready: Record 22 min!
3:56 Start run # 9412

*) According to PKR 2-3 MeV are explained by the increase of the PETRA-frequency by a few hundred Hertz (100 Hz ↑ corresponds to ~ 1.4 MeV ↓). See also note on page 81 of book IV. 5:50 PKR says: everything is explained by frequency increase.

RUN	DATE	START	STOP	I⁺	I⁻	DEAD TIME (%)	TIME (SECS)	RECORDS OUT	ALL TRIGGERS x10⁶	T0 REJECT x10⁶	T0 ACCEPT x10⁶	T1 ACCEPT LOOSE x10⁶	T2 ACCEPT	T3 ACCEPT	T2 3TOF 3TH	T2 COLLIN	T2 LOOSE 2TR	T1 LG>4
9394	25.11	5:07	6.12	7.6	7.9	12.2	3670	7504	955	117	838	22 ~~1337~~	7977	1071	—	4441	1550	2486
9395	"	6.12	6:42	6.9	7.2	9.6	1770	3053	461	44	417	8.3	3045	434	-	1880	529	1085
9396	"	9:44	10:12	8.7	8.9	14.2	1558	3794	405	58	348	10.4	3746	522	+ —	1778	832	1102
9397	"	10:14	10:17	8.5	8.7	13.4	145	432	38	5	33	0.9	342	41	—	137	84	107
9399	"	10:21	11:41	6.7	6.9	9.9	4770	8002	1241	122.6	1119	24.3	8861	1109	-	1798	589	2532
9400	"	11:42	11:57	4.9	4.8	8.5	707	1219	184	15.6	168	3.0	1157	130	-	282	104	397
9402	"	13:59	15:04	6.1	6.7	14.5	3876	8002	1009	146.4	863	26.5	10776	1053	-	1509	944	2668
9403	"	15:05	15:24	5.6	6.3	10.3	1146	1815	298	30.7	268	6.04	2363	216	-	1364	494	627
9404	"	16:25	16:47	8.5	8.9	15.4	1236 ~~1337~~	3011	321	49.4	272	8.5	3354	487	-	1532	876	999
9405	"	20:30	21:34	7.9	8.1	14.1	3815	8002	992	140	852	21.5	10435	962	-	4593	2552	2890
9406	"	21:34	21:42	7.7	7.9	10.4	440	803	114	11	102	2.0	863	96	-	461	204	279
9407	"	21:46	23:13	6.0	6.1	8.7	5212	8002	1356	118	1238	20.1	8874	853	-	5278	1926	2867
9408	"	23:13	23:38	5.7	5.8	7.3	1457	1923	329	27	351	4.6	2022	193	-	1330	342	692
9409	26.11.81	0:16	1.20	7.7	8.1	13.5	3834	8002	998	134	864	22.1	9570	1104	—	4686	2482	2692
~~9410~~	"	1:21	2:49	5.8	6.2	8.5	5255	8002	1368	116	1252	20.3	8301	880	—	5271	1626	2838
9411	"	2:49	3:26	5.1	5.5	6.1	2178	2595	567	34.5	532	5.3	2715	194	—	1912	469	925
9412	"	3:54	5:00	7.6	7.9	17.7	3722	8002	968	172	797	19.5	8255	985	—	4008	2326	2884
9413	"	5:01	6:30	5.7	5.9	7.7	5305	8002	1381	106	1274	17.3	7881	720	—	5139	1506	2781
9414	"	6:30	6:43	5.4	5.7	5.8	731	995	190	11.1	179	1.7	875	74	-	609	155	321
9415	"	7.15	8.18				3749	2728										
9416	"	9.55	10.18	9.8	9.6	21.6	803	2054	209	45.1	164	6.0	2608	254		1063	688	2997
9417	"	10:47	12:12	6.2	7.1	10.5	4832	8002	1257	131	1126	23.1	9273	980	—	5207	1982	8956
9418	"	12:12	13:13	4.8	5.6	6.8%	3659	4616	953	64.7	888	10.2	5094	446		3401	919	1608
9419	"	13:46	14:51	7.8	7.9	14.7	3721	8002	969	143	826	24.3	9909	1160	—	4681	2278	3063
9420	"	14:51	15:21	?	?	11.3	1853	3134	482	55	428	9.3	3777	337 ~~4035~~		2146	843	1212
9421	"	16:08	16:11	—	—	23.0	173	628	95	8	27	.6	284	300	—	174	61 ~~93~~	93
9422	"	19:18	19:34	8.7	8.8	21.6	933	4307	242	52	190	5.4	2142	2625	—	1022	602	642
9423	"	19:35	20:44	7.1	7.2	10.9	4138	6655	1077	117	959	22.6	8993	0	-	4819	2914	2616
9424	"	Run summary lost																
9425	"	22:50	23.59	7.6	7.9	14.0	3748	8002	975	136	838	21	8619	1247	—	4299	2266	5042
9426	27.11	0:00	0:30	6.8	7.1	10.2	1741	3799	453	46	407	7.0	3391	389	—	1289	941	1117
9427	"	0:34	8:29	5.8	6.1	8.3	3267	4164	850	70.8	779	10	5321	591	—	3052	1490	1730
9428	"	4:34	5:31	8.2	8.2	14.7	3389	8002	882	130	752	21	8804	1433	—	4006	2784	2645
9429	"	5:32	6:42	6.7	6.8	10.8	4190	7772	1091	117	973	20	8536	1214	—	4488	2460	2643

T1 LUMI	<L> x10³⁰	∫Ldt RUN	∫Ldt	IBM / TAPE	BEAM PIPE (V)	REJECT EVENT FACTION (%)	# GAMMA	# MULTI HADRON	BEAM ENERGY (GeV)	TDC 85	
887	7.28	28.56	7931.44	IBM	0.8	41	334	12	17.508	1328	
359	6.54	11.58	7943.02	"	0.6	39	141	7	17.503	1328	
363	7.62	11.87	7954.89	"	1.0	36.0	130	4	17.515	1328	
27	6.11	0.89	7955.78	"	0.8	19.3	20	0	"	—	
891	6.05	28.86	7984.64	"	0.7	41.9	374	11	17.509	1328	run 9378 doesn't exist
119	4.98	3.52	7988.16	"	0.55	32.5	35	2	"	—	
563	4.74	18.36	8006.52	"	0.8	48.3	204	6	17.505	1328	Run 9401 does not exist.
145	4.07	4.66	8011.18	"	0.55	47.3	42	3	"	1328	Beams dumped.
281	7.30	9.03	8020.21	"	0.8	42.9	124	4	17.509	—	Beams dumped.
830	6.74	26.47	8046.68	"	0.9	47.9	320	11	17.508	1326	
97	7.11	3.13	8049.81	"	0.7	41.1	34	0	"	1328	
897	5.54	28.87	8078.68	"	0.6	42.2	339	15	"	1326	
190	4.19	6.11	8084.79	"	0.4	39.1	96	3	"	1325	Beams dumped
882	7.41	28.39	8113.18	"	0.8	45.2	340	13	17.512	132.6	Ebeam changed to 17.508 in the run.
948	5.79	30.43	8143.61	"	0.57	39.7	370	18	17.508	1326	
315	4.65	10.12	8153.73	"	0.4	38.8	115	4	17.493	1325	Beams dumped
832	7.16	26.65	8180.38	"	0.8	39.8	371	11	17.510	1326	
981	5.98	31.73	8112.11	"	0.58	37.0	367	8	17.496	132.5	
105	4.63	3.39	8115.50	"	0.4	28.8	51	2	17.496	132.5	Beams dumped
				F11 120					—		Cosmics, B=0
405	7.61	6.11	8121.61	IBM	0.93	46.7	64	1	17.513	1326	Beams lost.
1352	4.82	23.77	8145.38	"	0.83	43.0	290	7	17.513	1326	
475	4.20	15.36	8160.74	"	0.48	40.5	180	8	17.488	1325	
723	5.80	21.58	8182.32	"	0.8	45.8	292	13	17.504	1325	
224	3.90	7.22	8189.54	"	0.68	43.8	101	3	17.504	1325	Beams lost.
29	6.87	.91	8190.45	"	.45	15.0	15	0	17.509	?	" "
180	6.31	5.89	8196.34	"	0.6	24.9	73	2	17.509	—	FWD trigger crazy } μ-crate 1 missing
710	5.58	23.09	8219.43	"	.18	42.5	278	6	17.503	1326	without FWD trigger }
				"	.45				17.509		μ-crate 1 on, T3 still off
931	7.08	26.53	8245.96	"	.75	42.0	320	11	17.514		
305	5.67	9.88	8255.84	"	.50	42.0	177	9	17.503	1325	
487	4.82	15.76	8271.60	"	.45	40.3	210	6	17.501	1325	Beams dumped
783	7.41	25.11	8296.71	"	.90	42.4	334	5	17.509	1325.5	
739	5.70	23.88	8320.59	"	.60	42.2	313	6	17.514	1325.5	

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0400 JETC trip.

0410 " " - unstable Beams

4:20 stable beams

6:45 Run 9414 stopped for energy saving : 130.7 nb^{-1} on this shift

7:15 Cosmic Ray Run (# 9415) with B=0 started. See page 39 in this book

T2-Trigger Reduction and z-Vertex Reduction flaggs off in MIPROC (in N50 Cosmic Rejection is already off)

Rate only 0.7 Hz, used to be 1 Hz. Reason not found. 800 Barlow, Matsumura

8:20 Stop Cosmic Ray fiddle

8:50 Petra starts injecting. Run up magnet in response to "Switch on the magnets" message

8:54 PKR tell us that magnet should be off. Run down magnet to 5000 A.

9:55 Magnet 7500 A

10:06 ID Trip

10:20 Beams lost. ID Trip.

10:44 ~~Start~~ New fill complete

11:55 Linac Tube exchanged

12:52 Linac O.K.

13:00 After phoning other experiments, tell DKR we would like a new fill at 13:15

13:13 End fill

13:45 ID Trip. Data taking continues! Discover the Step-run lemo connector had been taken out and not put back. Replaced it.

15:29 Beams Lost.

16:00 Littmann + Heuer

16:05 New filling ready. BP-Chr 22 had to be disconnected, was faking high background

16:15 While on the way to reset μ-Crate 1 (not possible in electronic house), they lost the beams, ID-trip.

16:30 We start energy-saving earlier

19:10 Magnet on 7496 A

19:15 Start new run with several problems: 1) μ-Crate 1 power off. Switch on → no CPU of life → Austin Ball will come

2) T3 has very high rate ⇒ 25% dead time
we disconnect the whole T3 ⇒ 12% dead time

20:00 L6 threshold ok

20:06 OC4 in CLRT✓ program ("Ruig violation"). Wait until run is finished.

20:07 Austin Ball comes in: Most probable if a μ-crate is missing and cannot be reset the T3 trigger goes crazy. So disconnecting T3 in such a case will help.

20:50 μ-Crate had to be exchanged. T3 plugged in again, Run 9424 started
T3 still high → disconnect it again. 30A fuse holder in crate 1 had disintegrated
A. Ball tries to fix it. T3 minor fast pulse boards in crates 1 & 8 both had to be replaced.

21:20 A few error messages: 44 suberror 302
46 1
53 140204
IBM online error check 2
But we still run.

21:22 We lost the beam and the TV-screen (page framestand power fail)
T3 is fixed (A. Ball is quite one)
Nord hangs. Run summary lost
I principally don't like shifts

21:45 Short break, run down magnet to 5000 A

21:50 Injection, run up magnet again to 7500 A

22:00 beams back

23:00 L6 thresholds adjusted, histograms ok

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0:00 Bartl + Wriedt

0:14 Forward μ-counter #31 is now more or less completely dead. It was already weak in previous runs.

0:25 JDAS ERROR 44, subcrat 703, Fadc 1

0:30 Twice data-taking stopped: no TPs accepted any longer. ~~Stop~~ stopped run 9426 and started new one. Looks ok.

1:30 New fill requested

~~4:20~~ Trouble with PIA / LINAC 2

8:00 Kobayashi, Feist

9:10 New filling ready

9:35 Noticed that N-50 was not configured. Stopped Run 9430, configured N-50 and restarted the run.

12:07 Histograms cannot be seen. Always the message "TOO QUICK! - DISPLAY BUSY - I WILL WAIT..." appears. Restart of the new run (Run 9433) doesn't work. Restart NORD. OK now.

13:45 IBM TRANSFER ERROR. IBM down.

Run	Date	Start	Stop	I+	I−	dead time	time	Records out	Acc triggers	T0 reject	T0 accept	T1 accept / prescale	T2 accept	T3 accept	T2 3 ToF 3 tracks	T2 Within	T2 ≥2 ToF ≥2 Tr	T1 ≥4
9430	27.11	9:14	9:25	9.4	9.7	17.6		1769										
9431	"	9:29	10:19	9.3	9.6	14.8	2549	5975	663	97	565	15.7	6610	1056	–	3004	1930	8122
9432	"	11:07	12:07	8.3	8.6	20.4	2946	8002	766	156	610	21.0	10052	1490	–	3782	3016	6388
9433	"	12:10	12:13	8.2	8.5	13.8	170	405	44	6	38	1.1	416	70	–	204	104	147
9434	"	12^{18}	13^{33}	6.5	6.8	12.0	4157	8002	1080	129	950	22.4	9256	1258	–	4746	2434	4002
9435	"	13:33	13:58	6.1	6.4	9.3	1460	2381	379	35	344	6.0	2663	353	–	1526	646	809
9436	"	15:27	15:45	7.5	7.7	12.0	1040	2101	270	32	238	5.6	2233	354	–	1193	617	656
9437	– 9445		IBM	+		triggers problems		/ no	valid	data								
9446	"	21^{13}	22:25	7.4	7.8	8.4	4259	8423	1108	92.6	1015	14.3	7000	874	–	4098	1773	2226
9447	"	22^{50}	23:21	10.2	10.1	18.0	1870	4908	487	87.4	399	13.0	5827	989	–	2374	1609	1541
9448	"	23^{23}	23^{30}	8.9	8.8	27.1	406	1235	105	28.6	77	2.4	1857	340	–	457	385	334
9449	"	23^{33}	0:36	8.8	8.8	14.9	3738	8002	972	145	828	20.7	9422	1409	–	6377	2348	2637
9450	28/11/81	0^{36}	1.30	6.2	6.2	9.3	3214	5087	836	77.6	759	12.8	5719	737	–	3348	1234	1739
9451	"	2^{24}	3:29	7.5	7.3	12.6	3883	8002	1010	128	883	23.5	8668	1493	–	4520	2253	2616
9452	"	3:29	4:38	6.1	6.0	9.5	4105	6426	1068	102	967	16.5	7825	968	–	4447	1408	2273
9453	"	5:15	6:17	7.7	7.8	13.3	3674	8002	955	127	828	22.4	8704	1472	–	4383	2438	2623
9454	"	6:17	7:31	6.2	6.3	9.2	4415	7410	1149	106	1043	18.6	7607	1133	–	4626	1726	2522
9455	"	8:14	9:12	8.3	8.7	14.8	3466	8002	902	134	769	23.7	8718	1594	–	4254	2230	2580
9456	"	9:13	10:30	6.7	7.0	10.1	4584	8002	1193	121	1072	22.1	8685	1414	–	5039	1930	2609
9457	"	10:30	10:44	6.4	6.8	8.5	816	1256	212	18.1	194	2.9	1292	178	–	806	275	393
9458	"	11:41	12:36	1.4	8.5	14.6	3335	8002	867	127	740	22.5	8213	1539	–	4070	2172	2580
9459	"	12:37	13:48	6.7	6.9	10.5	4261	8002	1109	116	993	20.5	8047	1268	–	4656	2008	2755
9460	"	13:49	14:13	6.3	6.4	8.1	1469	2275	382	31.1	351	5.1	2188	273	–	1402	481	826
9461	"	14^{33}	15:25	8.7	8.5	16.3	3111	8002	809	132	677	22.6	8621	1639	–	3884	2738	2564
9462	"	15^{27}	16^{23}	?	?	10.6	3335	6205	868	92	776	15.4	6506	933	–	3686	1746	2122
9463	"	17:03	18:01	8.3	8.2	14.6	3455	8002	899	131	768	23.9	8503	1578	–	4171	2257	2475
9464	"	18:01	19:22	6.6	6.5	9.3	4801	8002	1249	116	1133	21.1	8274	1273	–	4909	1907	2704
9465	"	19:23	19:27	6.4	6.3	7.4	231	342	60	4.4	55.5	0.8	341	42	–	207	66	107
9466	"	20:07	20:14	9.6	9.6	29.7	311	1046	81	24	57	1.9	744	461	–	356	196	202
9467	"	20:16	20:58	8.1	8.2	16.4	2550 4966	8002	663	109	554	15.5	5776	3627	–	2935	1399	1714
9468	"	21:00	22:23	5.9	6.0	8.6	4966	8002	1292	111	1181	19.1	7808	1579	–	4828	1673	2598
9469	"	22:23	22:30	5.7	5.9	8.6	367	845	95.5	8.2	87.3	0.99	469	407	–	336	82	171
9470	"	22:53	23:33	8.6	8.8	18.2	2359	8002	614	112	502	15.0	5506	3765	–	2722	1460	1636
9471	"	23.33	0.34	7.1	7.3	11.3	3653	8002	950	107.7	842	16.9	6778	2507	–	3845	1608	2191
9472	29/11/81	0:35	1:14	6.2	6.4	9.8	2325	5533	604	59	546	6.8	3363	2565	–	2152	750	1228

T1 Runs	⟨R⟩ ×10³⁰	SLdt Run	SLdt	IBM / tape	Beam mix	Reject event fraction	# Bhabha	# multi Hadron	Beam energy (GeV)	TDC 85	
	7.5	5.07	8535.66	IBM	0.75		?	?	17.511	1326	N50 not configured. No run summary.
1137	6.76	17.23	8552.89	"	0.75	43.0	222	7	17.507	1326	Beams lost
1001	6.85	20.17	8573.06	"	0.8	46.8	268	3	17.509	1326	
29	5.52	0.94	8574.00	"	—	40.4	14	1	"	—	
727	4.74	19.69	8593.69	"	0.65	43.5	236	12	17.500	1325	
186	4.11	6.01	8599.70	"	—	41.9	78	5	17.496	—	Beams dumped
175	5.41	5.63	8605.33	"	0.65	40.5	56	1	17.497	1325	IBM down
									17.495	1325	
588	4.45	18.96	8624.29	"	0.4	41.4	201	3	17.494	1325	
393	6.66	12.45	8636.74	"	0.8	45.6	176	5	17.513	1325	
70	5.20	2.11	8638.85	"	0.8	53.6	17	0	17.509	1325	
616	5.28	19.72	8658.57	"	0.7	44.7	253	9	17.509	1325	
423	4.30	13.81	8672.38	"	0.55	42.7	168	8	17.504	1326	Beams dumped
712	5.95	23.12	8695.50	"	0.6	42.4	290	9	17.509	1327	See note re Beam pipe value.
612	4.79	19.67	8715.17	"	0.5	46.2	256	11	17.509	1326	
779	6.81	25.03	8740.20	"	0.65	42.5	322	5	17.513	1326	
690	5.09	22.46	8762.66	"	0.45	38.8	253	4	17.507	1326	
722	6.72	23.31	8785.97	"	0.70	42.7	296	10	17.511 17.503	132.5	
695	4.86	22.28	8808.25	"	0.60	41.6	260	7	17.504	132.5	
134	5.20!	4.25	8812.50	"	0.45	38.9	58	4	17.504	132.5	Beams dumped
799	7.86	26.22	8838.72	"	0.75	41.0	307	9	17.507	132.5	
851	6.46	27.53	8866.25	"	0.55	39.5	357	10	17.500	132.5	
264	5.80	8.53	8874.78	"	0.45	37.5	113	6	17.500	132.5	Beams dumped
708	7.35	22.87	8897.65	"	0.8	42.4	301	12	17.502	—	
557	5.38	17.93	8915.58	"	0.55	40.3	227	4	17.488	132.5	Beams lost.
742	6.94	23.98	8939.56	"	0.77	41.7	270	8	17.505	1325	
734	4.98	23.92	8963.48	"	.55	40.0	323	8	17.508	1326	
76	4.91	1.13	8964.61	"	0.50	36.5	12	1	17.499	—	Beams dumped.
63	6.24	1.94	8966.55	"	0.72	31.0	30	2	17.512	~~1325~~	of T32
445	5.73	14.62	8981.17	"	.67	32.7	177	8	17.508	1325	Muon crate 12 was missing for 20 mins of this run
751	4.88	24.23	9005.40	"	.55	38.9	323	7	17.494	1326	
47	4.09	1.50	9006.90	"	.35	25.1	28	2	"	—	Beams dumped.
476	6.59	15.54	9022.44	"	.75	31.7	175	7	17.505	1325	
628	5.57	20.33	9042.77	"	.55	35.4	251	7	17.504	1325	
321	4.93	11.45	9054.22	"	.45	27.8	150	2	17.496	1326	Beams dumped

3900

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16:00 Yamada + Heinzelmann
16:20 IBM up again, but now time out Error 44 203 (Branch 2 Crate 3) After touching branch cables no triggers arrive, even no pedestal events. Call Eichler. Crate Controler of Crate 2 branch 2 exchanged -> seems ok. but meanwhile:
16:45 power saving
~ 18:00 cleaning people
20:30 AWapus replaces S Yamada.
21:13 finally data taking is working again. Before reaching this stage we disturbed R.E. at Felb, B.N while watching "Casablanca", + H Krehbiel.
reason for delay: 1) defect power supply of Lead glass ADC crate (bottom one)
2) no triggers when starting run via computer; works ok when starting manually.
cure: none -> System starts mysteriously, while we consult H.K via telephone (his masters voice!). Krehbiel's explanation: "Wackel Kontakt" in LG system (gating).
22:25 Beams dumped
22:50 new filling ready
runs 9446, 9447 have error message:
" Ypara 11: error in branch 2, Crate 7: bit written 177777, bit read 137777.
This error happens in the crate, for which we have exchanged the power supply.
Histograms look ok, rates as well. Call H. Takeda.

I touched the I/O register with my "GOD" hand., and error disappeared. This could be due to loose contact of I/O register of branch 2, crate 7. H. Takeda.

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0:00 Stephens, Meier
0:45 Check on Luminosity from the other experiments.
JADE: $4.4 \cdot 10^{30}$, MARK J: $4.5 \cdot 10^{30}$, PLUTO: $3.5 \cdot 10^{30}$, TASSO: $6 \cdot 10^{30}$
0:58 New fill in 30 mins.
1:22 All Histograms checked (not printed) and everything seems fine.
1:30 Run 9450 ended for new fill

2.20 Beam pipe > 1.2 Pressure we find 50% ↓ This corresponds Bp No 20 - this has been taken out.

3.15 Histograms printed out. all ok,
4:10 JDAS - Error 44, time-out branch 7, crate 3
4.20 hole in Jet C. wire map. find Power supply for V34 seems not to be working

#	8.3	7.3	7.4	8.4
DL8	124	121	123	127

The red lights on V34 top 2 only are light and are "flashing" and voltages are "wrong"

4.40 Request new fill

Phone Herr. Rieseberg and he instructs us on how to change the V34 crate power supply. Everything seems fine now.
7:01 JDAS - Error 44, time-out branch 7, crate 3
7:34 Everybody would be happy with a new Filling -> Beams dumped

8:00 P. Dittmann and H. Rieseberg on shift

8:15 New filling ready, start Run 9455 $L = 8 \times 10^{30}$
9:14 Run 9456 started

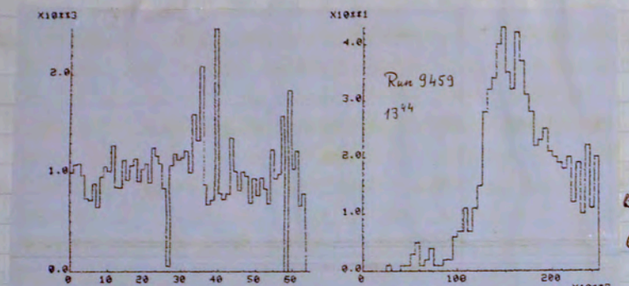
10:52 Near end of filling Lumi suddenly increased by 30%!
I called PKR and learned a lot, but maybe everybody else already knows it.
The PETRA operators have 3 tools to increase the luminosity, as currents go down
a) adjust HF frequency
b) Beulen fahren
c) shorten the bunch length (there is some magic device in the 'Blaues Palais', where ever this is)
They do these operations by hand from time to time and sometimes they get a big success.
They do not inform experiments of this fiddling (which is a.b.).

11:00 "Short Break" — is due to a Linac fault
11:40 New filling ready, start Run # 9458
YPARA 8: Pad, crate 1 channel 45 ~ >500

12^{23} YSPY : Trigger 2 output missing : 149
Histograms looks ok and stays ok

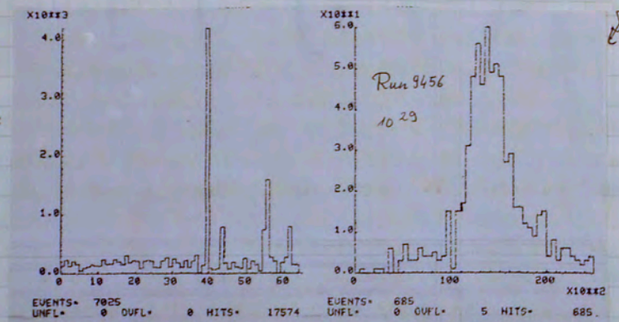
12^{36} Run 9459 started
YPARA Error 8 Ped. crate 1 Channel 45 is > 500 → same error as before (in Tokyo Lead Glass)

14^{10} Note. In a big part of this fill the tagging counters looked not so nice : High energy tail in spectrum and nearly all blocks with same frequency. This happened in runs # 9458 and 9459.



This phenomenon is known. It seems to be due to some pedestal instabilities. (E.g. a pedestal of 40 ADC-channels in each LG-channel would lead to 32×40 ADC-channels ≙ 12 GeV additional energy in each of these two plots → the -z - and the +z - plot each)

for comparison :



Otherwise this was a very good fill : 62 nb^{-1} in 2½ hours

14^{15} Beams dumped for refilling

14^{34} New fill ready, 13 min only! Start Run 9461 . Muon crate 5 missing, reset

15^{28} Start Run 9462 , Muon crate 2 missing, reset.

15^{46} The refill luminosity 'RL' indicated on TV is a factor 1.7 too low.
(conversion constant in software not yet updated). PDi

15^{55} On this shift we collected 143 nb^{-1} and 60 multihadronic events

16^{00} Rowe and Odaka on shift

16^{27} Beams Lost.

44 ~~Petra~~ PETRA has a trouble with RF cavities.

17:03 Beams are ready.

:08 LG-thresholds were adjusted. 50 mV.

:56 'JDAS ERROR 44 SUBERROR 204 TASK 1'

19.30 Beams dumped

20:05 New fill

:07 Start Run 9466 → 'MUON CRATE MISSING' Have to reset on the crate itself to get rid of it. Crate 14.

20^{17}: JDAS ERRORS: 44 Sub 302
45 "
53 "
63 "
51 "
47 "

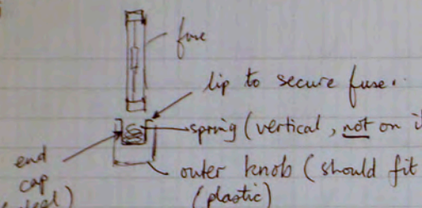
20^{20} Stop run

20^{21} Restart → OK except μ crate 14 goes missing again @ start of run. It could only be reset externally again.

20:23 Again μ crate-14 is missing, and cannot be reset.
→ T3 trigger rate is very high. dead time ≈ 19%

20.40 During this period I was checking μ crate 14. There was no power to the digitisers (all flashing red lights in the crate were off) ⇒ fuse blown. I replaced a 30A fuse in the socket at the back of the Cromenco supply behind the digitisers. (The fuse that went was the farthest one to the right, looking from the back). However, there are points to note when replacing such a fuse; Scrape out any ga debris which may be left in the socket
Make sure the spring in the end-cap of fuse holder is as shown :

FIRE!



It may be that on blowing, the outer knob no longer fits to the end cap. When I tried to secure the fuse in its holder using the outer knob the crate still remained off. I had to just use the end cap (turn it by hand without the outer knob). It is OK now.

Note: for now, the fuses are by the secondary telephone in counting room. Fuses are more likely to go at the moment because the crates were frequently turned on and off during the past week during tests by R. Barlow.

21:18 adjusted the thresholds of LG. 40 mV
22:16 Muon crate 14 is missing again, which is due to the trouble same as before.
:33 Beams dumped.
:53 New fill. → start run 9470, Muon crate 14 is still missing.
23:12 Muon Crate 14 was fixed.
23:25 I finally managed to fix it. But the spring mentioned above had completely disintegrated. So I pinched one from a 15A fuse holder and improvised for the 15A. It will probably happen again. Arosti Ball will probably have to be called during the night.

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0:00 Zhang, Meier
0:15 N-50 Histograms for Run 9471 checked → o.k.
0:40 Lumi is $4.71 \cdot 10^{30}$ now, we asked PKR to increase this value if possible
0:49 Lumi went up to $5.5 \cdot 10^{30}$, PKR adjusted HF-Frequency
1:05 All experiments agreed for a new Filling at 1:15
1:20 Chris and I replaced crate 14 for the one from Hall 2. When we switched on this 'new' crate the analogous fuse blew. Replaced it → seems OK for now. The crate fuse blew when the 1st digitiser was twiddled, but we couldn't reproduce it. Hope everything is OK now. P.R. and C.B.
1:42 New Filling ready
2:00 μ-Crate 14 missing → reset → o.k.

2.03 ID-Trip (Beams unstable)
3.07 JOAS Error 44, branch 7, crate 3
3.15 μ-Crate 10 missing → reset → o.k.
3.24 we have $L \sim 5.6 \cdot 10^{30}$ with beam currents of ~6.2 mA which gives a specific Lumi of $\sim 28.4 \cdot 10^{28}$!
3.44 new Filling requested
4.17 Filling ready
6.27 new Filling requested
7.00 new Filling ready

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8:00 Clark + Yamada on shift
9:35 I.D. trip maybe some beam was lost. (We did not see any remarkable change of currents)
B.P. current suddenly reached ~1 V.
10:02 New fill ready ← 9:50 (LG. HV resetting by RI-HB)
12:50 New fill ready

$\int_{shift} L\,dt = 151.54$

16.00 Stephens. 17:00 Feist

16.09 PKR. ask if we will accept new fill I⁻ 9.4 I⁺ 8.6
Decide to take it as a new fill could take at least 30 mins.
Histograms o.K. Printed out
16.45 Ask other groups if they are happy with present fill

TASSO new fill
PLUTO "
Mark J "

Ask PKR for new fill at 17.00 as they anticipate no problems in getting a better fill.
19.00 Histograms checked (not printed) o.K.
23.59 $\int_{shift} L\,dt \simeq 128\ nb^{-1}$

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Run	Date	Start	Stop	I⁺	I⁻	Dead Time [%]	Time [s]	Records out	All Triggers ×10⁶	TØ Reject ×10⁶	TØ Accept ×10⁶	T1 Accepn. ×10⁶	T2 Accept	T3 Accept	T2 3TOF 3TR.	T2 Collim	T2 ≥2TOF LG>1 ≥2Tr.	T1 LG>4
9473	29/11/81	1:43	3:10	6.3	6.8	10.5	4440	8002	1154	121	1033	19.1	8246	1128	—	4717	2058	3007
9474	"	3:10	3:44	5.6	6.0	6.9	2010	2752	523	36.1	486.5	5.4	2812	292	—	1886	606	940
9475	"	4:19	5:12	8.1	8.2	16.7	3176	8002	825.9	138.2	687.6	25.8	8801	1521	—	4136	2646	2606
9476	"	5:11	6:22	5.9	6.1	11.3	4182	8002	1089.9	122.5	965.3	24.5	8375	1280	—	4605	2307	2826
9477	"	6:23	6:28	5.8	6.0	8.5	294	465	76.6	6.5	70	1.2	485	64	—	288	130	108
9478	"	7.03	7.54	8.4	8.4	17.7	3064	8002	797.1	140.8	656.2	25.3	9360	1483	—	4004	2969	2640
9479	"	7.55	9.00	6.8	6.8	12.0	3940	8002	1025	122.8	902.5	25.2	8322	1309	—	4586	2207	2724
9480	"	9.01	9.33	—	—	9.9	1913	3299	497.7	49.5	448	9.38	3389	472	—	1953	822	1153
9481	"	10.02	10.54	8.5	8.5	17.1	3105	8002	808	138	670	25.6	8918	1521	—	4069	2672	2605
9482	"	10.54	11.57	7.0	7.0	12.7	3781	8002	985	125	859.9	24.4	8685	1274	—	4611	2413	2865
9483	"	11.58	12.23	6.5	6.5	10.7	1523	2805	396	42.3	354	8.05	2989	410	—	1685	801	971
9484	"	12.53	13.44	8.4	8.5	17.7	3017	8002	784.6	139	645.5	24.5	8945	1510	—	3892	3074	2646
9485	"	13.45	14.48	6.9	7.0	12.7	3762	8002	979	124	855	23.5	8599	1282	—	4385	2694	2805
9486	"	14.48	15.27	6.2	6.3	9.7	2316	4007	602	58.2	544	11.18	4191	586	—	2465	1066	1385
9487	"	16^{03}	16^{59}	6.7	7.5	13.4	3395	7338	883	118	765	21.9	8044	1196	—	4033	2539	2522
9488	"	17^{25}	18^{22}	8.1	8.1	16.0	3293	8002	857	137	720	23.9	9389	1506	—	4083	3122	2565
9489	"	18^{23}	19^{37}	6.4	6.4	10.2	4458	8002	1160	117	1042	21.2	8245	1217	—	4610	2287	2868
9490	"	19^{38}	19^{57}	6.0	6.1	7.6	1136	~~2677~~ 1657	295	22.5	273	3.74	1639	207	—	991	438	614
9491	"	20^{38}	21^{40}	8.0	8.1	15.5	3387	8002	881	136	745	22.3	8712	1450	—	3959	2857	2664
9492	"	21^{40}	22^{54}	6.5	6.6	10.6	4376	8002	1139	120	1018	23.3	8528	1286	—	4824	2029	2705
9493	"	22^{54}	23^{75}	6.7	6.2	8.2	1229	1978	319	26.3	293	5.2	1913	287	—	1212	404	691
9494	30/11/81	23^{44}	0:45	8.2	8.2	13.4	3581	8002	931	125	806	19.5	8346	1278	—	4156	2358	2696
9495	"	0^{45}	2^{05}	6.4	6.3	8.9	4812	8002	1251	111	1140	17.3	7887	1023	—	4761	1893	2821
9496	"	2:06	2:35	5.8	5.8	6.7	1704	2361	443	30	413	4.3	2301	212	—	1509	505	862
9497	"	3:15	4:22	8.0	8.1	13.0	3685	8002	958.5	124.5	834	19.4	8471	1256	—	4094	2407	2774
9498	"	4:22	5:25	6.7	6.8	9.0	3756	6085	978	87.6	890	13.9	6470	815	—	3678	1611	2184
9499	"	5:54	6:47	6.8	5.6	15.0	2945	~~6557~~	766	115	651	16.5	7504	1106	—	3347	2070	2110
9500	"	9:11	10:14	8.2	8.1	16.5	3540	8002	921	142	778	21.6	9541	1364	—	3949	2613	4495
9501	"	10:14	11:01	7.1	7.0	10.0	2808	4803	731	73	658	12.4	5246	698	—	2909	1236	1651
9502	"	11:13	11:38	6.5	6.4	8.2	1499	2236	390	32	358	5.3	2383	280	—	1464	514	778
9503	"	12:05	13:05	8.2	8.1	13.4	3578	8002	931	124	806	21.7	8344	1448	—	4262	2215	523
9504	"	13:05	13:59	7.1	6.9	11.0	3221	5615	838	92	746	15.6	6553	955	—	3465	1570	1799
9505	"	14:43	15:38	8.7	8.5	15.3	3286	8002	855	131	724	22.3	8526	1523	—	4079	2292	2602
9506	"	15:39	15:55															

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T1 Lumi	⟨L⟩ ×10³⁰	∫L·dt Run	∫L·dt	IBM TAPE	Beam Pipe [V]	Reject Event Fraction [%]	# Bhabha	# Multi-hadron	Beam Energy [GeV]	TOC 85	
837	5.95	26.42	9080.64	IBM	0.7	40.0	296	7	17.496	1326	
520	5.13	~~9.39~~ 10.30	9090.94	"	0.4	38.6	169	4	"	1326	Beams dumped
735	7.46	23.69	9114.63	"	0.8	43.4	261	16	17.509	1326	
746	5.77	24.14	9138.77	"	0.7	41.0	248	10	17.496	1326	
93	4.90	1.44	9140.21	"	0.5	39.0	11	0	"	1326	Beams dumped
733	7.64	23.41	9163.62	"	0.9	45.1	285	9	"	1326	
812	6.66	26.26	9189.88	"	0.	40.7	274	8	17.509	1326	
316	5.36	10.25	9200.13	"	0.5	37.7	140	5	17.503	1325	Beams dumped (Part 2) ~9:35
739	7.62	23.66	9223.79	"	0.8o.9	43.4	262	6	17.513	1325	
726	6.11	23.14	9246.93	"	0.65	41.9	284	9	17.507	—	
246	5.21	7.93	9254.86	"	0.5	40.7	105	3	17.506	1325	Beams dumped ~ 12.28
742	7.93	23.92	9278.78	"	0.99	43.7	272	11	17.511	1325	
754	6.49	24.42	9303.20	"	0.8	41.9	314	5	17505	1325	
373	5.16	11.96	9315.16	"	0.65	40.4	122	3	17.505	1325	Beams dumped
664	6.32	21.47	9336.63	"	0.85	42.4	254	6	17.500	1325	
669	6.62	21.79	9358.42	"	0.9	45.0	280	12	17.508	1326	
762	5.50	24.52	9382.94		0.75	40.2	302	8	17.503	1325	
175	4.98	5.65	9388.59		0.5	34.1	78	2	17.444	—	Beams dumped
727	6.97	23.60	9412.19		0.8	42.7	285	8	17.510	1326	
760	5.58	24.41	9436.60		0.7	41.2	290	12	17.510	1325	
176	4.61	5.66	9442.26		0.55	40.1	71	1	17.50	—	Beams dumped
885	7.95	28.49	9470.75	IBM	0.80	41.1	356	14	17.509	1325	
965	6.49	31.22	9501,97	"	0.6	38.7	346	13	17.500		
977	5.26	8,97	9510,94	"	0.4	37.0	117	2	17.496	1326	Beams dumped
814	7.15	26.34	9537.28	"	0.7	41.5	310	12	17.504	1326	
639	5.45	20.46	9557.74	"	0.6	40.4	283	8	17.496	1326	Beams dumped
584	6.37	18.77	9576.51	"	0,8	43.7	237	6	17.509	1325	Beams dumped
924	6.54	23.17	9599.68	"	0.8	45.6	252	12	17.504	1326	
505	5.77	16.20	9615.88	"	0.6	42.1	190	8	17.502	1325	
227	4.87	7.30	9623.18	"	0.4	40.4	106	2	17.502	1325	Beams dumped
773	6.93	24.81	9647.99	"	0.6	41.2	295	14	17.509	1325	
443	4.38	14.10	9662.09	"	0.5	43.9	159	6	17.500	1325	dumped
773	7.91	25.98	9688.07	"	0,8 0,6	42.1	346	9	17.511	1325	
								4451		~~1325~~	Run Sum Lot Not Jan

30/11/81

0.00 OLSSON & BAMFORD on shift

0.45 Start run 9495
2.05 Start run 9496
4.21 Start run 9498
5.54 Start run 9499 new filling.
6.10 I.D. trip reset OK
6.45 I.D. trip
5.00 Beam dumped Magnet powered down to 500A by hand, could not log into the MAGNET Program ! You should log in under USER JADE and not PUBLIC !
Why is then a MAGNET program under USER PUB ?

8.00 h Heintzelmann & Hardt on shift
9.15 h Start run 9500
10.14 Start run 9501
11.01 Nord50 jam. Reload Nord
11.13 Start run 9502
13.15 M. Crate 2 missing -> reset
15.50 Run would not restart, re-started N.10. (2 goes necessary).

30.11.81

16.00 Odaka / Clarke
16.20 The hit rate of LG end cap # 115 is very high. This must be due to the HV value. We will re-set it during the energy saving time. —▷ This could not be resolved after "Re-set," but does not badly affect data taking.
16.45 Switch off HV's, and run down Magnet. Energy Saving Time

19.10 run up the Magnet to 7500A.
20.07 Noticed that Test TDC 1 pattern shifted (upwards) by ~ 35 channels.
20.14 ID-trip - anode current - reason unknown
20.21 ID-trip - anode current - reason probably beam fluctuations.
20.24 Run stopped — "NO TRIGGERS" message — could not see any reason ie, all electronics looked OK so stopped now & restarted — cured problem.
23.43 ID-trip, Anode Current.
~~23.58~~
"

1.12.81

0.00 Kobayashi, Thiele
0.20 did not get any histograms onto screen (always message 'too quick ...' appeared on console). Stopped run 9512 ; re-booted VAX from level ⑤ on ~ problem has gone.
3.22 4 time-outs : Error 44, suberror 703, task 1
5.10 Another time-out — " —
7.05 Start cosmics - run
7.30 New set of tagging EHTs (Mark 5) installed

08.00 Tuesday 1/12/81 Yamada & Loebinger

09.30 PKR announce Vacuum leak. Restart ~ 19.00.
We continue to take cosmics.
10:13 "Achtung PETRA wird eingeschaltet" PKR called us telling they would inject beam.
H.V. is switched off now. ← cosmic Run stopped.

11.15 Start new run (9520)
At start of run 9520 TEST TDC 1 hitpattern on YHMON specials shifted from 1404 to 1441 — Is this significant I ask myself?
13.35 A man came to check the air conditioner.
He ~~to~~ says he needs 15' ~ 20' at most.
13:55 New Fill ready
13:40 ~ NORD consol continued to print error messages
[ERROR 37 ZOX error
Address 50405 LEVEL (DEC.) 1.]
R. Eichler came to fix it.

16:00 J. Olsson + R.D. Heuer
16:45 energy saving starts, run down magnet to 500A
19:00 magnet up to 7500 A, still Camac-problems
20:00 J.O. disappears, Minowa appears
↳ the Camac problem doesn't
22.50 NORD problem came from CATHE: a branch demand cable touched ground. D.C.
23.10 No T2-trigger, Nagasaka + Uchihori are coming

Run	Date	Start	Stop	I^+	I^-	Dead Time [%]	Time [sec]	Records out	All Triggers $\times 10^6$	Tϕ reject $\times 10^6$	Tϕ accept $\times 10^6$	T1 accept+ postpone $\times 10^6$	T2 accept	T3 accept	T2 STOF 3TR	T2 collin.	T2 $\geq$ 2 TOF $\geq$ 1 LG > 1 $\geq$ 2 TR	T1 LG>4
9507	30/11/81	15:58	16:43	6.0	5.3	8.0	2692	4018	701	56.2	645	9.8	4094	~~555~~ 611	—	1723	1176	1421
9508	"	19.58	20,30	8.8	9.0	17.0	1433	3583	3728	63.2	309	9.0	3942		—	4335	2655	3793
9509	"	20:33	21:42	7.2	7.3	12.3	4152	8002	1080	133	947	18.9	9761	1153	—			2574
9510	"	21.43	22.09	6.7	6.8	9.3	1554	4214	404	37.7	366	6.1	2747	341	—	1580	655	849
9511	"	22.28	23.20	8.7	8.7	18.9	3016	8002	785	148	637	18.0	9697	1346	—	3511	3366	2542
9512	"	23.20	0:21	7.2	7.2	10.8	3301	6267	859	93	766	14.0	6352	924	—	3353	1686	2458
9513	1.12.81	0:25	1:15	6.2	6.2	7.4	2890	4131	752	56	697	8.7	4117	557	—	2618	885	1477
9514	"	2:47	3:47	8.0	8.1	13.8	3778	8002	984	136	848	24.4	9104	1466	—	4495	2441	2677
9515	"	3:47	4:15	7.5	7.5	10.6	1657	2935	431	46	385	7.9	3245	464	—	1803	824	1030
9516	"	4:47	5:42	8.1	8.3	14.7	3437	8002	895	131	763	23.1	8635	1577	—	4115	2408	2586
9517	"	5:42	6:48	6.6	6.8	10.4	3951	7221	1028	106	922	21.6	7347	1276	—	4373	1523	2382
9518	"	7:06	10:12				11136	8340		COSMIC		RUN						
9520	"	11.17	12.14	8.4	8.1	14.7	3407	8002	887	131	756	24.3	8607	1520	—	4301	1857	2603
9521	"	12.15	13.29	6.8	6.5	10.4	4419	8002	1150	119.3	1031	24.4	8304	1337	—	4920	1514	2676
9522	"																	
9523	"	} forgot: no T2-Trigger																
9524	"																	
9525	2/12/81	2.22	3.09	8.3	8.3	16.1	3363	8002	875	141	734	22,3	9546	1522	-	4218	2392	2472
9526	2/12/81	3,09	4,20	8.24	8.24	11,0	4020	7402	1046	115	931	20,4	7875	1156	-	4516	1269	2495
9527	2/12/81	4.46	5.57	8.2	8.1	14.4	3656	8002	951	137	814	24.7	9097	1635	—	4447	1925	2555
9528	"	5.57	6.27	7.0	7.0	9.8	1749	3050	455	45	410	10.1	2443	594	—	1287	535	1104
9529	"	6.38	6.47	6.6	6.6	9.7	993	1658	259	25	234	4.7	1736	249	—	1053	336	555
9530	"	10.36	11.28	9.8	9.8	20.6	2925	6214	761	156	604	17.0	7016	1059	—	3298	1657	2612
9531	"	11.37	3.15	6.0	5.9	10.6	5800	9285	1509	150	1349	23.9	10043	1279	—	5767	2222	3000
9532	"	13:45	14:47	7.9	8.1	13.7	3550	8002	924	126	797	213	6354	1350	—	4464	1948	2614
9533	"	14.48	16.08	6.2	6.4	9.3	4822	8002	1255	117	1138	21.3	8445	1162	-	5080	1774	2745
9534	"	16.09	16,47	5.6	5.7	7.0	2264	3008	589	41	548	7.1	3116	335	-	744	213	1060
9535	"	19:58	20:18	9.5	9.6	20.1	1166	3369	304	61	242	9.5	3973	676	-	469	353	1001
9536	"	20:23	21:15	7.9	8.0	17.7	3108	7002	809	111	698	19.8	7548	1225	-	1448	1892	2349
9537	"	21:16	22:14	6.7	6.7	10.0	3360	6240	900	90	810	16.8	6291	939	—	900	1392	2138
9538	"	22:40	23:36	8.2	8.4	14.9	3346	8002	871	130	741	23.0	8669	1411	-	4743	2010	2482
9539	"	23:37	0:57	6.6	6.7	10.4	4436	8002	1154	120	1034	22.6	8394	1276	—	4773	1844	2723
9540	3/12/81	0:51	1:19	6.1	6.2	8.1	1629	2435	424	35	389	6.2	2523	318	—	1567	531	880

T1 LUMI	$\langle L \rangle \times 10^{30}$	$\int L dt$ Run	$\int L dt$	IBM/ TAPE	Beam pipe [V]	Reject event fraction [%]	# BHABHA	# multi hadron	Beam energy [GeV]	TDC 85	
404	4.94	13.31	9701.38	IBM	.35	39.7	151	2	17.502	1325	Beams dumped.
513	8.31	11.90	9713.28	"	0.79	42.2	139	5	17.509	1326	
780	6.06	25.16	9738.44	"	0.6	45.6	287	9	17.507	1326	
245	5.16	8.02	9746.46	"	0.45	40.2	113	4	17.504	1325	Beams dumped
669	17.24	21.84	9768.30	"	0.78	45.6	273	7	17.513	1325	
620	6.02	19.87	9788.17	"	.55	39.7	260	4	17.509	1325	
429	4.79	13.85	9802.02	"	.36	38.6	189	3	17.504	1325	Beams dumped
714	5.96	22.50	9824.52	"	.78	43.8	269	9	17.507	1326	
274	5.32	8.82	9833.34	"	0.30	42.2	124	2	17.503	1325	Beams dumped
763	7.18	24.69	9858.03	"	0.73	42.4	260	15	17.509	1325	
707	5.77	22.81	9880.84	"	0.57	39.8	282	10	17.504	1325	Beams dumped
											Cosmic run B=0. Cell 13.3.1 off for about 10 min
814	7.62	25.95	9906.79	"	0.77	42.6	329	9	17.509	1326	
839	6.09	26.89	9933.68	"	—	40.6	308	9	17.506	1326	beams dumped
											HORD 50 not on, ignore
711	6.73	22.64	9996.32	IBM	0.60	45.4	295	9	17.506		
727	5.75	23.13	10,019.45	IBM	0.45	41.2	272	10	17.505	1325	Beams dumped.
687	5.93	21.68	10041.13	IBM	0.59	44.1	266	10	17,513	1325	
318	5.84	10.22	10051.35	"	"	34.3	115	5	17.509		* This run partly without I.D. *
151	4.89	4.85	~~10055.20~~ 10056.20	"		40.6	83	3	12.500		
721	7.32	21.42	10076.62	"	0.60	43.7	258	5	17.509	1325	
958	5.29	30.67	10107.29	"	0.40	41.3	387	5	17.506	1325	with FADC readout, beams dumped
					10088					1326	~~All channels read out~~ FADC
873	7.87	27.92	10135.21	"	0.62	41.2	350	15	17.508	1325	
846	5.64	27.20	10162.41	"	0.40	40.9	334	12	17.500	1325	
317	4.49	10.17	10172.58	"	0.25	39.4	138	4	"	1326	
807	8.58	10.00	10182.58	~~1847~~ tape	0.75	45.3	122	4	17.503	1326	Luminosity exceeded 1.1×10^{31} at start of run!
721	7.36	22.88	10205.46	711170	0.58	42.4	266	11	"	1326	data written on tape
641	5.87	20.31	10,225.77	IBM	0.30	39.3	272	8	"	1326	
836	7.96	26.62	10,252.39	IBM	0.7	42.3	348	9	"	1325	
816	5.91	26.20	10,278.59	"	0.4	40.9	370	6	17.504	1325	
244	4.86	7.91	10286.50	"	0.3	39.9	118	2	17.500	1326	beams dumped
		$\Sigma = 598\,nb^{-1}$					$\Sigma = 6918$ $= 607\,nb^{-1}$	4737			

2/12/81

0⁰⁰ Dittmann & Pearce
Nichts geht mehr!
T2 trigger box in rucksack cannot be initialized, problem with CAMAC serial link
Kawabata called
Found 3 faulty Serial Highway Drivers in the CC10 crate
A spare unit stolen from the other NORD works.
→ Two faulty units still in CC10 crate: station 4 and station 20
We do not dare to switch off the power on CAMAC again until morning break

2¹² Beams again – and (unbelievable) everything works.
Finally, we take data again, after 12 hours.

6²⁰ For something like 10 min (during run 9528) we were running without ID, because we did not notice an ID trip since the buzzer was switched off and the gate was pulled out, after all that fiddling before.

6⁵⁰ Switch off all.
– WHY am I not allowed to go home now ??!

8:00 Glendinning + Narodka on shift.

11.30 Repeated JDAS 44/701, 707, 703 errors. Wagner and Eiller shake all possible cables. Then it seems to work, but for how long?

Run 9531 started with F8/77774B to read out FADC.

13.15 Beams dumped. Broken units taken out of Serial CC10 Crate.

16.00 Wednesday 2/12/81 Peter Warming & Fred Lobenz (standing for Chris Bowdery) for 2 hours

17.45 Beams dumped – Energy Saving

17:50 C. Bowdery arrives

19:10 run up magnet to 7500 A

20:20 IBM Error 54. IBM is OK, phone to TASSO (NOTZ), they also cannot get data onto IBM, suspicion: multiplexer died. TASSO tries to phone Hoekwetter, we write next run onto tape after some while: connection is up again.

3/12/81

0:00 Hellenbrand, Meier
0:51 Start RUN 9540
1:15 Beams dumped
1:40 New fill ready, start RUN 9541
2:41 YSPY detected error: no hits in FWD-Counters 30,31.
We cleared the corresponding Hit-Map and observed a normal behavior of the two counters 30 and 31.
2:54 JDAS Error 44, Suberror 703
4:13 Beams dumped
4:21 Magnet fluctuations (I = 7480 A), reset to 7500 A → o.k.
5:20 Tagging-HV wrong, 51 V instead of 1432 V in channel 3 of mainframe 63, reset → o.k.
6:14 Magnet fluctuations, reset to 7500 A → o.k.
6:45 Beams dumped, Magnet down to 500 A, Energy Saving Time
7:00 Cosmics RUN 9546, B = 0, $I^+ = I^- = 0$

8:00 Pearce + Peters
9.00 End of energy saving. Problem with positrons in LINAC.
10:35 new fill ready
PKR playing with prepulse timing – we lose trigger occasionally as a result. Have to continually push pause/continue until they finish.
15:15 I.D. alarm
16:00 Bethke & Glendinning
1607 Start run 9552
BP-Current offset not adjustable any more → battery ~~flat~~ flat, no new one found.
Note: Offset ~ −0.2 V, flat battery eats another 0.1 V; after new fill: show 0.7 V
↳ real value: about 1.0 V!

16:20: stop run 9552, because Heiner has some special wishes.
start new run 9553 with readout flash-ADC's → dead time ~ 99%, something wrong.
stopped 9553, started normal 9554.
forget 9553!
16:43 stopped run 9554, started 9555, again with FADC's readout. (Heiner came back again!)

RUN	Date	Start	Stop	I^+	I^-	Dead Time [%]	Time [sec]	Records on	All Triggs $\times 10^6$	T0 reject $\times 10^6$	T0 accept $\times 10^6$	T1 accept+ postpone $\times 10^6$	T2 accept	T3 accept	T2 3TOF 3TR	T2 coll'in	T2 ≥2TOF ≥2TR	T1 LG>4
9541	3/12/81	1.47	2.49	7.8	8.3	13.9	3701	8002	964	134	830	24.5	9078	1530	—	4415	2226	2561
9542	"	2.49	4.10	6.1	6.6	9.7	4809	8002	1252	121.8	1130	23.6	8628	1226	—	5035	1884	2709
9543	"	4.10	4.13	6.1	6.5	8.2	157	237	41	3	38	0.6	250	29	—	151	47	70
9544	"	4:41	5:40	8.3	8.2	14.6	3509	8002	913	733	780	26.2	8792	1537	—	4260	2028	2578
9545	"	5:40	6:44	6.8	6.6	10.2	3810	6768	992	101	891	29.7	6943	1122	—	4094	1039	2264
9546	"	6:55	10:08	-	-		11571	8502										
9547	3/12/81	10.33	11:26	8.42	9.55	13.9	2510	5536	654	91	563	16.2	5882	977	-	2459	1509	1649
9548	"	11:28	12:42	6.4	6.6	10.4	4439	8002	1155	121	10347	21.7	8595	1139	-	4631	2434	2776
9549	3/12/81	12.39	17:57	6.41	6.66	6.66	2781	4091	723	58.2	665	11.1	4285	580	-	2628	996 1081	1408
9550	"	13:58	14:55	9.2	8.4	16.1	3254	8002	847	136	711	22.6	9069	1432	-	5915	2872	2571
9551	"	14:56	15:44	6.3	6.5	11.0	2499	4756	650	72	579	12.6	5135	752	-	2750	1389	1675
9552	"	16:10	16:18	10.2	10.1	22.2	420	1199	109.3	24,3	85.1	3.4	1371	228	-	555	305	348
9553	forget it !																	
9554	"	16:20	16:30	9.73	9.3	18.0	1211	3321	315.2	56.7	258.5	9.4	3764	645	-	1503	1301	1067
9555	"	16:41	16:47	9.1	9.1	20.2	376	845	84.8	17.2	67.7	2.2	910	140	-	379	323	258
9556	3/12/81	19:38	19:40	10.1	9.9	27.2	102	348	26	7.2	193	0.72	425	54	-	142	233	84
9557																		
9558	3/12/81	21:25	21:49	6.6	6.4	11.1	1327	2425	345	38.4	306	5.1 [illegible]	2785	292	—	1278	1152	827
9559	"	22:15	23:12	8.0	8.9	27.3	3216	8417	837	228	609	19.7	10478	1763	-	3389	5445	2589
9560	"	23:12	23:35	7.3	8.2	19.7	1627	3148	423	83	340	8.8	3423	538	-	1686	955	1064
9561	"	23.41	1.00	5.8	6.5	11.6	4747	8002	1235	143	1091	20.6	8330	1208	-	4766	2025	2773
9562	4/12/81	1.01	1.09	5.6	6.4	9.9	447	648	117	11.6	105	1.5	657	79	-	393	173	223
9563	4/12/81	1.33	2.22	8.7	8.6	19.1	2935	7098	764	146	618	20.8	8045	1343	-	3464	2579	2217
9564 9565 9566	FORGET THESE RUNS																	
9567	4/12/81	4.37	4.51	9.9	9.8	25.7	799	2084	207	53	154	5.6	2385	409	—	944	799	632
9568 → 9572	FORGET THESE RUNS																	
9573	4/12/81	5.55	6.44	6.8	6.8	9.3	2955	4742	769	72	697	11.3	5488	613	-	2914	1515	1667
9574	4/12/81	11.17	12.05	10.11	10.15	16.9	2813	7189	732	124	608	19.2	8202	1253	-	3390	2519	2306
9575	"	12.05	1:12	8.39	8.55	12.1	3979	8002	1035	125.6	910.2	20.7	9009	1257	-	4482	2549	2687
9576	"	13.11	13:45	6.86	6.98	9.5	2020	3317	526.2	49.8	476.4	8.7	3682	473	-	2062	967	1126
9577	"	14:16	15.03	10.24	10.45	20.6	2735	7493	711.7	146.3	565.4	20.4	9273	1545	-	3397	2997	2316
9578	"	15:12	16:05	8.51	8.68	13.7	3090	6628	844.5	109.8	654.6	18.6	7600	1185	-	3671	2005	2208
9579	"	16:06	16.50	6.4	6.6	9.8	2681	4615	697.7	68.1	629.6	11.8	4890	738	—	2874	1091	1535

T1 LUMI	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ RUN	$\int L dt$	IBM Tape	Beam-pipe [V]	Reject Event Fraction [%]	# Bhabha	# Multi Hadron	Beam-Energy [GeV]	TDC 85	
751	6.496	23.92	10310.42	IBM	0.65	41.0	314	6	17.505	1325	
772	5.14	24.70	10335.12	"	0.45	41.4	275	14	17.500	1325	
24	4.60	0.72	10335.84	"	0.40	37.8	12	0	17.500	1326	Beams dumped
773	6.96	24.42	10360.26	IBM	0.70	43.0	291	8	17.504	1326	
703	5.89	22.43	10382.69	"	0.45	40.2	280	8	17.498	1326	beams dumped
				F11 184							COSMICS tables 9.4.2 and 17.4.1 off for a few minutes
615	7.85	19.70	10402.39	IBM	0.58	41.5	209	8	17.509	1327	
789	5.74	25.49	10427.88	"	0.43	41.4	319	13	17.506	1327	
375	4.31	11.98	10439.86	IBM	0.36	40.1	139	2	17.506	1325	Beams dumped.
727	7.20	23.42	10463.28	IBM	0.75	43.9	283	11	17.512	1326	
402	5.16	12.89	10476.17	"	0.58	41.6	151	5	17.512	1326	Beams dumped
106	8.07	3.39	10479.56	"	1.10	44.1	37	3	17.513	1326	
300	7.81	9.46	10489.02	"	0.9	44.1	107	2	17.513	-	
70	6.74	2.20	10491.20	"	0.9	41.3	27	2	17.509	-	with FADC
25	8.05	0.82	10992.02	IBM	.85	43.1	14	0	17.509	-	
					.85					1326	No Run Summary due to NORD disc error.
212	5.16	6.85	10998.87	IBM	.50	42.9	80	1	17.500	1326	Beams Dumped
694	6.85	22.04	11020.91	"	.70	46.8	269	6	17.509	1325	with FADC
301	5.95	9.68	11030.59	"	.65	42.5	174	4	17.504	1326	without FADC
769	5.18	24.58	11055.17	"	.60	40.4	347	11	17.500	-	without FADC
62	4.36	1.95	11057.12	"	0.50	35.6	30	2	17.500	1325	with FADC Beams dumped.
573	6.22	18.26	11075.38	"	1.05	43.9	226	7	17.510	1325	with FADC
											Problems with error 64. Beam dumped.
129	6.37	5.09	11080.47	"	0.90	44.5	78	3	17.513	1325	
					0.65						Problems with error 64.
395	4.26	12.60	11093.07	"	0.45	43.2	146	4	17.496	1325	without FADC. Beams dumped
735	8.35	23.48	11117.55	"	1.00	44.0	292	15	17.506	132.5	
817	6.54	26.01	11142.56	"	0.75	43.4	372	7	17.505	132.5	
311	4.98	10.06	11150.62	"	0.60	42.1	109	6	17.505	132.5	Beams dumped
574	6.69	18.28	11168.90	~~IBM~~	0.94	46.7	248	3	17.513	132.5	
514	5.65	17.46	11186.36	Tape Run 177	0.75	43.5	218	2	17.504	132.5	
425	5.10	13.66	11200.02	IBM	0.62	40.6	169	5	17.507	132.5	
		Σ 416 nb⁻¹ Σ 914	10700.02				Σ 5166 = 453 nb⁻¹	Σ 1584 4515			

19:40 New fill ready, start run 9556
several times JADAS error 64 ! 1707; 1700, 1703... cancel go on. stopped run.
Started new run after some checks, all o.k. (??) (found no mistake).

~20:40 Message: "no triggers".
Not possible to give any commands on keyboard. Tried to reload Nord 10 → no effects, N10 doesn't work. Phoned D.C., he will come.

21:25 disk unit was down; changed to other drive D.C.

22:15 New fill ready - lets hope we can get some luminosity this time (8 no for this shift)
Run 9559 started with non-standard options, readoutpattern = 777746, trig. source = 240006.

22:35 Many (~12) JADAS error 64 – "do you want to stop the run?" answered NO, twice and no more errors!

22:50 Again: several times "Error 64, Suberror 00170. (0...7); disappears after some seconds. At the same time when error occurs: deadtime → 99%. What happens?

22:55 deadtime ≈ 30% the whole run. checked CG-thresholds: were at 25 mV, should be 45.
Corrected then. → deadtime 17%.

23:00 more JADAS error 64 mainly suberror 1707. went away after acknowlegeing twice.

23:15 stopped run 9559, because 8417 records out. (This run was with FADC).
started new run (without FADC).

23:25 Yet more error 64 – This time it took more acknowlegements to get rid of them.

23:27 It's getting worse. (Help!)

23:43 "No Events, no triggers" can't see anything wrong so stop run and start again → Ok!??

0.00 Friday 4/12/81 Beate Naroska & Fred Ledebirger

2.30 Magnet tripped, called U.

3.50 Magnet finally fixed (10 fuses had blown)
But immediately followed by a plague of the infamous error 64.

4.10 Managed to start run 9566

4.15 Beams dumped for refill.

6.00 After many more error 64 spasms, fault finally (hopefully) traced to a faulty TOF TDC. This has now been replaced by a BP TDC, and a new TDC put in the vacated BP slot. System now appears to work O.K (i.e. can run), TOF ~~BP~~ TDC's all O.K but replacement BP TDC not being read out (nobody seems very worried about this!). Advised YSPY list, how to get this error message all the time.

6.45 Beams dumped for Energy Saving.
Beate wins the toss and scrapers off home to bed!

8.00 Zhang and Riesberg on shift

9.04 Not yet started. PKR says: Problème mit Schlüsselschalter!

9.30 Our Magnet up to 7500 A

9.53 Short break: A water hose is broken at a foil monitor station. Magnet → 4500 A

10.30 Magnet → 7500 A as PETRA Magnets are on injection values

10.45 Again: Short break

11.00 Injection has started. Mrs. Tesse and Schmidtmann are testing the faulty disk unit. Result: not ok.

11.50 New fill ready, start Run 9574. At the beginning high event rate and high background ~ 21%
BP-TDC # 16 to 23 are working again. (Mr. Schmidtmann has this morning re-plugged the unit and connected the input cables, which were all out)

12.04 Run 9575 started. D. Cords has for this run reactivated the YSPY for the BP-TOFs
RL = reload luminosity is missing on color TV. No remark concerning this found.

13:45 Beams dumped.

14:15 New fill ready, Run 9577 started

15:00 IBM ERROR 53 Suberror 000000 (time out user channel) and then
IBM ERROR 54 Suberror 140000 (time out at MPX station)
Mr. Hadwiller refuses responsibility! → write on tape
I phone later to IBM, and people there tell me that Mr. Hadwiller is working on the problem.

15.30 Several errors JDAS ERROR 44 in 703

W. Bartel phones:
Access Monday 7.12.81
7 – 10 a.m.

16.00 Hughes + Finch + Stephens.

16.05 IBM Communication re-established. End Run # 9578
Start Run 9579

16.50 End # 9579. HV off. Magnet → 500 A Energy Saving

19.14 Magnet ⇒ 7500 A.

20.42 Jade $\mathcal{L}$ = 7.36 MarkJ 8.0, Tasso 10.0 Pluto unknown $\times 10^{30}$

21.06 We notice that $\int$ Ldt since Run #9556 has been 500 nb^{-1} too high. This $\int$ Ldt from Run #9550 onwards has been corrected for this anomaly.

21.23 Beams lost from 5ma → 0 in about 2 mins. V high BP + Jetch Current

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RUN	DATE	START	STOP	I^+	I^-	DEAD TIME (%)	TIME (SECS)	RECORDS OUT	ALL TRIGGERS $\times 10^6$	T0 REJECT $\times 10^6$	T0 ACCEPT $\times 10^6$	T1 ACCEPT + POSTPONE $\times 10^6$	T2 ACCEPT	T3 ACCEPT	T2 3 TOF 3 TR.	T2 COLLIN	T2 $\geq$2TOF $\geq$2TR.	T1 ≥ 4
9580	4-12 Si	19.20	20.23	7.7	8.0	13.4	3708	8002	964	129	835	22.3	8573	1363	—	4289	2051	2980
9581	"	20.24	21.23	—	—	10.4	3446	5933	896	93	802	15.5	6123	955	—	3536	1341	1959
9582	"	22.18	23.19	9.98	10.09	17.5	3602	8002	937	164	773	22.6	8532	1494	—	4202	2010	2589
9583	"	23.19	0.35	6.3	6.5	10.0	4489	7730	1169	117	1052	19.6	7987	1157	—	4693	1745	2502
9584	5/12 Si	0.58	1.55	8.3	8.6	19.5	3328	8002	866	169	697	23.0	8620	1592	—	3989	2202	2465
9585	"	1.56	3.05	6.7	6.9	12.4	4436	8002	1076	133	942	22.6	8535	1329	—	4606	2051	2685
9586	"	3.05	3.20	6.4	6.6	9.6	857	1364	223	21.5	201	3.8	1438	219	—	835	298	459
9587	"	3.46	4.37	8.4	8.7	16.4	3148	8002	819	134	685	22.5	8540	1638	—	3996	2386	2517
9588	"	4.38	5.50	6.7	6.9	10.8	4327	8002	1125	121	1004	21.2	8342	1302	—	4719	1934	2700
9589	"	5.50	6.50	5.6	5.8	7.7	3557	5275	925	71.5	854	11.8	5312	739	—	3385	1075	1784
9590	"	7.18	8.21	7.9	8.2	15.4	3396	8002	884	136	748	22.2	8298	1479	—	4023	2245	2570
9591	"	8.22	9.37	6.3	6.6	10.1	4497	8002	1170	119	1052	21.1	8402	1236	—	4746	2122	2811
9592	"	10.06	10.58	8.4	8.9	16.9	3112	8002	809	136	673	23.4	8917	1663	—	4020	2565	2644
9593	"	10.59	12.03	6.9	7.3	12.4	3846	8002	1000	124	877	22.0	8627	1476	—	4550	2158	2722
9594	"	12.03	12.38	6.4	6.8	9.5	1564	2684	407	38.6	368	6.7	2790	417	—	1603	704	957
9595	"	12.59	13.50	8.6	8.8	17.7	3045	8002	792	140	652	23.6	9033	1649	—	3941	2546	2498
9596	"	13.51	14.21	7.8	8.0	13.7	1817 3977	3977	473	64.6	408	11.7	4279	738	—	2127	1103	1328
9597	"	14.23	15.46	6.2	6.4	9.9	4632	8002	1205	119	1086	21.1	8408	1903	—	4950	1903	2643
9598	"	15.41	15.58	5.4	6.1	7.8	1026	1583	267	21	246	3.6	1563	254	—	994	328 382	510
9599	"	18.16	19.12	8.0	8.6	15.4	3294	8002	857	132	725	22.4	8813	1483	—	3987	2477	2623
9600	"	19.13	20.26	6.3	6.8	10.3	4339	8002	1142	118	1024	19.2	8588	1122	—	4661	2380	2648
9601	"	20.27	20.58	5.7	6.1	7.8	1887	2758	491	38	453	5.8	2847	325	—	1739	704	993
9602	"	21.49	22.46	9.62	9.87	16.2	3346	8002	871	141	730	21.8	9846	1347	—	3978	2949	2749
9603	"	22.46	23.44	7.90	8.18	11.7	3430	6562	893	105	788	14.5	7958	807	—	3568	2361	2223
9604	6/12 Si	0.23	1.17	8.20	8.7	16.6	3165	8002	823	136	687	22.2	9264	1458	—	3858	2722	2529
9605	"	1.18	2.35	6.4	6.8	10.9	4261	8002	1108	121	987	21.8	8557	1289	—	4706	2185	2653
9606	"	2.36	3.04	5.9	6.3	8.2	1711	2643	445	37	408	6.3	2709	380	—	1645	609	835
9607	"	4.17	5.13	7.8	8.8	16.7	3207	8002	835	140	695	22.0	8891	1447	—	3854	2625	2498
9608	"	5.13	6.25	6.1	7.0	10.7	4303	8002	1119	120	999	21.6	8499	1184	—	4573	2348	2677
9609	"	6.26	7.15	—	—	8.1	2925	4377	761	62	700	10.7	4589	580	—	2921	1007	1489
9610	"	8.48	9.39	8.5	8.6	18.0	3037	8002	790	142	647	24.2	9307	1773	—	4002	2780	2469
9611	"	9.40	10.44	7.1	7.2	12.5	3911	8002	1018	128	891	23.2	8780	1457	—	4534	2191	2644
9612	"	10.45	11.44	6.5	6.6	10.1	1705	2908	446	45	399	8.5	3279	512	—	1895	765	937

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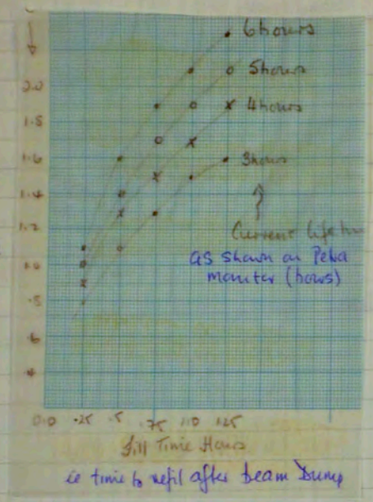
T1 LUMI	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ RUN	$\int L dt$	IBM/TAPE	BEAM PIPE (r)	REJECT EVENT FRACTION (%)	# BHABHA	# MULTI HADRON	BEAM ENERGY (GeV)	TDC 85	
971	7.76	28.78	10728.80	IBM	0.9	43.2	343	11	17.509	1325	
644	6.03	20.78	10749.58	"	0.65	40.6	272	7	17.509	1325	Beams lost
832	7.42	26.72	10776.30	"	0.9	41.8	336	6	17.509	1325	hi dead time early in run due to IBM busy
843	6.10	27.39	10803.69	"	0.62	40.0	349	9	17.500	1325	Beams dumped
782	7.67	25.52	10829.21	"	0.95	42.4	293	13	17.509	"	
757	5.85	24.20	10853.41	"	0.72	41.3	304	6	17.504	1325	
134	5.06	4.34	10857.75	"	0.55	40.8	60	0	"	1325	Beams dumped.
720	7.18	22.60	10880.35	"	0.95	43.2	274	12	17.504	1325	
795	5.81	25.14	10905.49	"	0.71	40.7	305	21	17.500	"	
493	4.40	15.63		"	0.52	38.5	191	9	17.496	"	Beams dumped
691	6.52	22.13	10973.25	"	0.99	41.1	313	9	17.506	1325	
703	4.87	21.89	10995.14	"	0.6	40.6	331	9	17.506	1325	Beams dumped
627	6.27	19.44	10984.58	"	0.99	43.5	289	8	17.515	—	
632	5.10	19.60	11004.18	"	0.7	41.8	263	10	17.505	1325	
224	4.48	7.00	11011.18	"	0.5	40.1	99	2	17.505	1325	
710	7.38	22.49	11033.67	"	0.9	43.9	258	7	17.513	—	
364	6.39	11.60	11045.27	"	0.7	42.1	144	7	17.513	1325	
792	5.56	25.76	11071.03	"	0.6	40.9	297	10	17.504	1325	
151	4.74	4.87	11075.90	"		37.9	54	2	17.504		
769	7.69	25.34	11101.24	"	0.95	43.2	307	8	17.513	132.6	
885	6.54	28.70	11129.94	"	0.65	41.4	341	8	17.503	132.5	
298	5.03	9.49	11139.43	"	0.50	39.9	106	7	17.495	132.5	Beams dumped
734	6.94	23.24	11162.67	"	0.90	46.6	274	12	17.500	132.6	
541	5.05	17.33	11180.00	"	0.70	46.7	213	9	17.500	132.5	Beams dumped — prior Cunningham
659	6.67	21.10	11201.10	"	0.92	44.1	259	12	17.509	1325	
798	6.05	25.77	11226.87	"	0.70	41.5	323	6	17.500	1325	
275	5.16	8.83	11235.70	"	0.50	38.9	118	3	17.500	1325	Beams dumped
814	8.44	27.07	11262.77	"	0.95	43.4	309	7	17.509	1325	
867	6.49	27.94	11290.71	"	0.70	41.2	315	9	17.504	1325	
460	4.99	14.60	11305.31	"	0.50	40.3	169	6	17.500	—	Beam lost.
618	6.38	19.37	11325.68	"	0.95	44.9	286	9	17.518		
717	5.85	22.89	11348.57	"	0.80	42.6	294	7	17.517		
235	4.42	7.54	11355.11	"	0.75	43.7	75	2	17.517		Beams dumped
								267			
								2784			

$\Sigma = 655.09 \text{ nb}^{-1}$ 11355.11 nb^{-1}

23^{30} 4 times Error 44 on Crate 703.



Optimum duration of fill before dumping.

Refill luminosity = long term average luminosity.

RL on Celsius TV seems to be wrong by a factor of 3.28 ~~Error~~ ~ $2 \times \frac{11.5}{7.0}$

← Assumes constant Specific luminosity (whereas SL increases by ~ 30% over a 4hour fill)

If we run for e.g. 2x optimum time on a given fill then long Term $\int Ldt$ is reduced by a factor ~ 0.75

5-DEC-'81

0:00 Gardiner & Otto.
:05 LG thresholds were adjusted 45 → 40 mV
:35 Beams were dumped.
:55 New fill
1:28 very frequently 'IBM BUSY', then the dead time is very high. inst. dead time ~ 50%
1:35 above fault has gone away.
3:20 Beams dumped
3:50 Message on writer YVOLTS: TAG - MFR=63 CHAN = 14 HV= 0.007 SHOULD BE 1.487
" " 15 0.002 1.466
4:30 ↳ Tagging HV error recurs, 2 channels seem dead. JDK's manual says if more than 150 V out call an expert, so call H. Wriedt. He says he will fix it tomorrow morning, unless it becomes much worse it will be 'OK' till then. He says channels 16-19 may also go wrong without serious immediate effect.

5/12/81

05:55 21 hadronic events in last run - nearly a record!
adjusted the LG thresholds 40 → 35 mV.
6:50 Beams were dumped.
7:15 New fill
7:20 Started run 9590, now channels 0,7,8 are also faulty on Tagging HV - decide to leave for now.
8:00 Dittmann + Minowa
13:00 One pcad in tagging EHT power supply, MFR 63, exchanged (channels 12-15): cures the problem but gives YVOLTS: NO LAM FOUND

Complaint: In average once per shift I find the "ID-trip"-inhibit unplugged from the trigger box. Sometimes, in addition, the "ID-trip"-buzzer is turned off. I hope nobody falls into this trap and tries to publish fancy events with lots of neutrals but no charged particles.

14:20 This message gets more serious now: NO LAM FOUND ON MFR 63
and next line Wrong HV on MFR 63
~~A~~ possibility to fix the problem of wrong EHT-values (appear mean at the moment: 0 – 100 V instead of 1400 – 1550 V) temporarily is according to the following recipe [on MFR 63 I numbered the relevant toggle switches]
(i) pause the run
(ii) go to other side of the hall, switch ~~off HV~~ MFR 63 (or 61) from "remote" to "local" [toggle sw. ①]
(iii) switch off HV (use small toggle switch, red LED will go off) [toggle sw. ②]
~~(iv) at channel 37~~
(v) restore voltage (you have to use two toggle switches at the same time), ~~after some sec~~ [switches ③ + ④]
(vi) switch on HV ~~first~~ (after some seconds the EHT should be there) [toggle sw. ②]
(vii) switch MFR back from "local" to "remote" [toggle sw. ①]
~~If~~ procedure does not work call F. Wriedt
~~I~~ will come in anyway to watch this problem.
The second problem (error message on line-printer "no lam found" can't be fixed at the moment.
Please acknowledge this error for the time being. do not switch off power

16:00 Mc Cann & Riesberg on shift. 16:01 Beams dumped
17:15 PKR does not succeed to store more than 4 nA e^+
18:17 New filling ready, start Run 9599
Test TDC 1: Peak is at 1430 (instead of 1400), this happened already before.
Beate Naroska explaines us that the burst marker has shifted by about 1.5 μsec, which does not matter. (20 channels/μsec)

19 40 Keith Stephens replaces Hugh McCann
20.44 Mark J inform us that beams will be dumped at 21.00
21.47 New fill ready
22.00 H. Wriedt phoned to check on status of Tagging H.V. We have had no problems with H.V. errors or LAM's (although we are not sure why!) since run # 9599. Henning also says he will not be contactable for a few hours but he will phone in and check on the situation sometime in the night.
NEXT SHIFT PLEASE NOTE

6/12/81
0.00 Warming & Kanzaki on shift.
1.00 YVOLTS : TAG - MFR 63 CHAN 3 ~ 5.
Pause run 9604 and follow the instructions (p.183) to reset tagging HV. (effective here only for channel 3)
1.25 YVOLTS : " CHAN 4, 5 ← ch. 3!
HV on MFR 63 power supply is 1433 V. (normal?). Repeat the same procedures. (effective here only for channel 3 4)
1.55 " " CHAN 4, 5
Repeat the same (effective now for channel, 4 and 5)
3.10 beams dumped
4.21 ID trip beams of beam spikes

0500 R Eichler & P. Murphy.
Short break
8.47 Start data taking
8.55 Adjust LG thresholds
9.30 Tagging HV MFR63 channel 19, 30 out. Follow standard procedure
11.24 Short Break. Magnet down to 5000A
12.00 LINAC 2 Problem. Restart 14.00. Magnet down to 500 A.
14.20 "INJECTION"; so we turn magnet up to full current.
14.45 "Power Supply out of order"; magnet back to 500 A.

16.00 Kobayashi & Takeda on shift
"Power Supply out of order" Restart 17:00.
17.35 start "INJECTION".
18.10 Start run 9613.
Tagging HV wrong. CHAN = 15, 16, 17

CHAN = 15 was reset by computer program. But 16 & 17 were not.
Reset 16 & 17 by manual.

19:05 ID tripped. Anode current.
19:15 "
19:30 tried to do YHMON sampling, but it didn't work. "YHMON: There are NO booked Histograms!!"
After some try-and-error's I succeed to allocate histograms.
20:15 Mark-J informed us to dump the beam in 30 min.
21:25 New filling ready.

21:30 Tagging HV wrong again. chan 21, 26, 27, 28 → reset.
22:15 Tagging HV wrong. (ch. 18 ~ 21) → reset.

7/12/81
0:00 Goddard & Kawabata on shift.
0:18 Beam dumped for the new filling
1.41 Start Run 9619
1:50 Tagging HV error channel 5, 6, 7, 8 → reset
2.00 Note: Test TDC 1 histogram is suddenly shifted by 20 counts.
4:10 Beam dumped for the new filling and start injection
6:05 Start Run 9622
8:10 Tagging HV error channel 6 ~ 13 ⇒ reset.
8:30 Check the LG threshold. (O.K.)
6.45 Energy saving, magnet to 500 A.

0800 P. Murphy & S. Yamada.
0915 Injection begins. Set magnet to 7500 A.
1005 "Short Break"; magnet to 500 A.
10:30 Minowa appeared and found LG. H.V-read serial cables were ~~unto~~ unconnected, which are set normally now.
10:55 "Achtung PETRA wird eingeschaltet!"; for the second time this morning.
11.00 Tagging HV - power supply MFR 63 replaced by spare one. HV
11.45. Beams are being injected again, so magnet to 7500 A.
12.30 We got beam.
12.55 Still "Background Optimization", but PKR say any changes will be small and slow. B.P. current reads 0.7 nA, steady, so I switch HV on.

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RUN	DATE	START	STOP	I^+	I^-	DEAD TIME	TIME (Secs)	RECORDS OUT	ALL TRIGGER $\times 10^6$	T0 REJECT $\times 10^6$	T0 ACCEPT $\times 10^6$	T1 ACCEPT HIPOSTRONE $\times 10^6$	T2 ACCEPT	T3 ACCEPT	T2 2TOF 3 TR	T2 COLLIN	T2 2TOF LG>1 2TR	T1 LG>4
9613	6/12/81	18:06	19:00	9.7	9.6	17.5	3164	8002	823	144	680	21.8	9616	1502	—	3879	2941	2478
9614	"	19:00	20:19	8.1	8.3	11.0	4317	8002	1123	123	999	20,5	8898	1186	-	4738	2261	2640
9615	"	20:19	20:50	5.7	5.8	8.7	1773	2762	461	40	421	6,5	2989	369	-	1791	686	918
9616	"	21:27	22:38	7.8	8.1	16.0	3349	8002	871	139	732	22.1	8883	1460	-	4098	2602	2943
9617	"	22:38	23:45	6.1	6.3	9.8	4580	8002	1191	116	1075	20,3	8271	1219	-	4853	1821	2672
9618	"	23.46	0:14	5.7	5.9	8.3	1689	2417	439	36	402	5.8	2530	329	—	1676	507	866
9619	7/12/81	1.42	2.40	7.9	8.6	18.0	3180	8002	827	149	678	21.1	10523	1398		3825	3301	2513
9620	"	2.40	3:52	6.4	7.0	12.5	~~4420~~ 3974	8002	1033	129	905	19.8	9620	1181	—	4411	2859	2738
9621	"	3:53	4:05	6.2	6.8	9.0	694	1150	181	16	164	2.9	1159	145	—	680	276	434
9622	"	5.06	6.04	7.7	8.3	15.1	3346	8002	870	131	739	22	8996	1491		4096	2667	2588
9623		6.04	6.45	6.8	7.3	11.2	2441	4449	635	71	564	13	4954	742		2657	1353	1609
9624	}	I D Pulse - runs on tape																
9627	}																	
9628	7/12/81	~~8~~ 12:56	14.00	5.6	6.8	12.0	3965	7568	1027	122.9	904.1	22.9	8613	1194	—	4516	2200	2538
9629	"	14:02	14:15	5.3	6.5	11.3	740	1215	192.8	21.8	171.0	3.4	1324	182	—	735	371	398
9630	"	~~15~~ 15:06	15.56	8.0	8.8	25.6	3023	8002	786.8	201	585.6	25.7	10570	1782	—	3736	3110	2354
9631	"	15.57	16.46	6.8	7.6	19.6	2840	6598	737.5	145	595	22.0	8736	1273	-	3587	2546	2007
9632	"	20:13	21.00	7.9	8.8	19.3	2843	8002	737.8	143	597	22.9	9321	2334	-	3689	2385	2028
9633	"	21.01	22.06	6.4	7.3	12.3	3792	8002	986	121	865	22.6	8215	1924	-	4324	2028	2293
9634	"	22.07	22.14	6.3	7.1	10.2	380	746	99.2	10.1	89.0	1.84	769	159	-	446	189	198
9635	"	22.47	23.46	7.9	8.1	16.6	3453	8002	898	148	749	27.6	10514	792	—	4630	2631	2769
9636	"	23.47	1.05	5.9	6.3	10.6	4676	8002	1217	128	1088	24.1	9699	426	—	5221	2277	2966
9637	8.12.81	1.06	1.29	5.32	6.24	8.4	1410	2083	367	31	336	5.0	2409	114	—	1394	613	777
9638	"	1.54	2.55	9.71	9.84	15.7	3625	8002	944	148	796	26.0	10711	586	—	4692	3160	2886
9639	"	2.55	4.15	7.73	7.98	9.8	4775	8002	1243	121	1121	19.8	9195	432	—	5140	2357	2990
9640	"	4.15	4.29	5.68	6.05	7.8	792	1127	206	16	190	2.49	1275	56	-	752	306	430
9641	"	4.52	5.52	10.14	9.73	15.5	3586	8002	933	145	788	24.4	10305	535	—	4480	3076	2922
9642	"	5.52	6.48	7.72	7.64	10.3	3273	5510	851	87	764	13.9	6658	250	—	3510	1798	2068
9643	"	~~14~~ 15:05	15:16	7.6	8.0	12.9	4248	8002	1106	143	962.7	25.7	10195	465	—	5025	2595	2909
9644	"	15:17	15:45	6.5	6.8	9.8	3448	5431	898	88	809.	16.7	6494	299	—	3624	1587	2087
9645	"	15:45	16:45	5.9	6.3	9.8	1768	2515	460	45	415.4	6.9	2916	147	-	1759	673	888
9646	"	19:29	20:28	8.0	8.4	16.9	3376	6904	879	148	730	21.8	9339	418	-	4011	2768	2404
9447	"	20.31	22:34	2.8	5.3	10.3	7254	10564	1888	194.	1694	31.2	12365	570	—	7263	3050	3780

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T1 LUMI	<L> $\times 10^{30}$	$\int L dt$ RUN	$\int L dt$	IBM TAPE	BEAM PIPE (V)	REJECT FRACTION %	# BHABHA	# MULTI HADRON	BEAM ENERGY (GeV)	TDC 85	
746	7,54	23.84	11378.95	IBM	~1.0	45.7	275	8	17,503	—	
770	5.92	25.57	11404.52	"	0.65	42.4	332	9	"	1325	
274	4.96	8.79	11413.31	"	0.5	40,8	104	5	17.495	1325	
701	6.65	22.29	11435.60	"	0.9	43.2	343	3	17.503	1325	
841	5.89	26.97	11462.57	"	0.6	40.0	331	8	17.498	1325	
237	4.49	7.59	11470.16	"	0.45	40.2	105	3	17.498	1325	Beam dumped
625	6.19	19.68	11489.84	"	.95	48.2	250	9	17.509	1326	
596	4.76	18.90	11508.74	"	0.87	44.8	247	9	17.500	1326	
110	5.04	3.50	11512.20	"	0.5	39.2	56	3	"	1325	Beam dumped
756	7.22	24.17	11536.37	?	0.85	43.6	265	7	17.509	1325	
463	6.06	14.79	11551.16	?		41.6	154	3	17.504	1326	
646	5.49	21.66	11572.82	IBM	0.87 0.6	43.3	293	10	17.503	1327	NORD clock is wrong. Written here is the correct time.
105	4.61	3.41	11576.23	"	0.5	41.3	35	1	17.503	—	← WITH FLASH ADC. Beams dumped.
459	4.84	14.64	11590.87	"	1.0	48.5	169	5	17.508	1326	
353	~~4~~ 3.91	11.10	11601.97	"	.9	48.1	140	2	17.496	1326	Beams dumped
503	5.77	16.40	11618.37	"	1.0	45.1	219	5	17.509	1327	
690	5.93	22.50	11630.87	"	0.75	40.7	269	4	17.504	1327	
58	4.51	1.71	11631.58	"	0.56	37.4	19	0	17.504		Beam dumped.
830	7.70	26.58	11658.16	"	~1.0	47.8	314	11	17.507	1326	FWD Muon trigger : now 2 tracks ; page 188
949	6.48	30.32	11688.48	"	.73	44.5	399	13	17.495	1325	
231	5.30	7.47	11695.95	"	0.50	42.6	96	5	17.495	1325	Beams dumped
864	7.65	27.75	11723.70	"	0.88	48.2	357	11	17.515	1325	
941	6.34	30.30	11754.00	"	0.67	42.5	387	6	17.507	1325	
127	5.15	4.08	11758.08	"	0.48	41.7	53	3	17.495	1325	Beams dumped
916	8.16	29.25	11787.33	"	0.95	~~46~~ 46.9	351	8	17.513	1325	
639	6.26	20.50	11807.83	"	0.68	44.3	247	7	17.498	1325	Beams dumped, Energy saving
874	6.61	28.09	11835.92	"	0.75	46.3	343	15	17.509	1326	
607	5.64	19.45	11855.37	"	0.50	44.1	246	8	17.500		
258	4.68	8.28	11863.65	"	0.48	42.5	107	6	17.500	1325	Beams dumped, Energy saving
717	6.10	22.63	11886.28	"	0.9	48.5	298	10	17.500	1326	No events accepted → EM Stopped
1162	5.15	37.34	11923.62	"	0.6	42.9	438	17	17.496	1326	
					0.3					1325	

with FADC

12:56 Stell run 9628.
~15:00 New fill ready
15:08 LG. threshold level 40 → 45 mV. (at the biginnig of Run 9630)
15:10 HV read error.
15:15 Both currents have rather short life time. 1.3 ~ 2.6 hours!
Although the currents are high (at the biginning >10mA), Luminosity is poor.
$SL = 10.9 \times 10^{28}$ only! and the dead time is ~25%. $\langle L \rangle_{fitted} \sim 5.7 \times 10^{30}\ cm^{-2} sec^{-1}$
We prefer lower currents with better SL (at the end of filling SL goes up to $23 \sim 24 \cdot 10^{28}$) if we don't get better luminosity anyway.
15:20 MK-J called us asking our luminosity. They also see rather bad conditions as we do.

There will be an access time of 15' from 1700 today (for TASSO)

15:50 IBM BUSY IBM BUSY IBM BUSY .....
IBM operater doesn't see anything wrong.

16.00 B. Naroska & K. Stephens

1655 Magnet at 500 amps.
18.30 TAGG HV POWER SUPPLY WAS ON WRONG ADDRESS. FROM NOW ON THERE SHOULD BE NO MORE ERRORS!

19.00 No fill possible because } problems with LINAC 2

23.00 Forward muon trigge is now the highest accepta rate at the beginning of a run and only decreases a little toward the end. So I increased the numbe of muon tracks to 2 (it was 1 before) that are demanded in T3. The dead time went down by ~ 4% at the beginig of the run. Ask Austin Ball's opinion about efficiency to muons.

Before (Begin last fill from 9632)
$\frac{2350\ TWMU}{7791\ ew} = 0.30$

Now (run 9635)
$\frac{340 \cdot TWMU}{1960\ ew.} = 0.17$

8/12/81 11:00 Suspect noise in streets 6 & 16. (+y and −y directions in barrel). Will check when beam is available.

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0:00 P. Steffen and H. Rieseberg
0:20 H. Vriedt phones to ask if everything is ok with tagging. In case of a HV failure restore HV according to the prescription on page 183 (there are no labels yet on the newly installed power pack)

1:06 Start run 9637
1:30 beams dumped
1:53 New fill is ready, start run 9638
Clean fill. Good steering of luminosity; $\mathcal{L}_{corr}$ still over 8×10^{30} after 1 hour of runing
2:55 Run 9639 started
3:20 Filling is 1 h 25 min old $\mathcal{L}_{corr} = 8.0 \times 10^{30}$, $L_{spec} = 27 \times 10^{28} = SL$
3:55 " " 2 h " $\mathcal{L}_{corr} = 6.5 \times 10^{30}$, $L_{spec} = 28.7 \times 10^{28}$
4:00 $\mathcal{L}_{corr} = 7.0 \times 10^{30}$, $L_{spec} = 32.4 \times 10^{28}$! ($I^+ = 5.9$, $I^- = 6.3$ mA)
4:15 Run 9640 started
4:30 $SL = 32.5 \times 10^{28}$, beams dumped
4:50 New fill ready, start Run 9641. Again a high luminosity, low background fill.
5:52 Start Run 9642
6:31 The known YSPY non-sens message: TOF 30, 31 no hit
6:47 $SL = 34.2 \times 10^{28}$ at $I^+ = 5.70$, $I^- = 5.95$ Nearly the record of 15.5.81 reached
6:50 Stop for energy saving $144.7\ nb^{-1}$, 51 MH, 1824 BA on this shift. (26)
8:00 Yamada & Goddard on shift
For the next two days Pluto is turned off and PKR will see what max. luminosity they can achieve.
First Beam steering with small current in one beam.
12:10 MARK-J called telling that PKR had finished beam stealing and they would inject at 1330. But the luminosity will be low.
?? ← is it what we wanted excluding PLUTO?
14:00 Start run 9643 $\mathcal{L}_{corr} = 8.5 \times 10^{30}$, $SL = 16 \times 10^{28}$ not as good as last night.
15:17 JOAS error 44 suberror 703
16:00 Heinzelmann & Kawabata on shift.
16:15 Run 9645 with F-ADC data started.
17:00 Energy saving time starts. Magnet down to 500A
19:00 Magnet up to 7500A
19:25 New fill ready. Start Run 9646

8.12.81

22:40 μ-Crate missing faulty part 12. Cannot be reset in electronic hut.

22:45 $e^+ = 2 \pm 3$, $e^- = 5.14$ mA. PKR has to keep the filling because of synchrotron problems.
$\langle L \rangle \sim 1.5 \times 10^{30}$

9.12.81

0:14 ZHANG + Bethke on shift

→ E.O.B. ← (End of book)