JADE LOG BOOK IX Runs 11270 – 12592

Ein Brunnen-Erzeugnis

JADE LOG BOOK
Nr. IX

Run 11270 – 12592

Run	Date	Start	Stop	at Run Start I_+	at Run Start I_-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	To rej. $\times 10^6$	T_1 Acc. Sum.	T_2 Acc. Sum	T_1 Bit 2 E_i 76 GeV	T_2 Bit 17 $2T \cdot E_4 \cdot 2tr$.	N50	MIP	TOF	<L> $\times 10^{30}$	SLdt Run	SLdt Exp.	IBM/TAPE	BP [V]	T_2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

(18-MAY-'82)

4:06 New Fill
"Background Optimization"
:23 BP counter #21 is very noisy. → pulled out.
4.38 Beam lost
5:05 New Fill
:28 JDAS ERROR - TIMEOUT branch 2 crate 3.
:35 ID was switched off because of high BP current.
BP counter #9 produces very big signal and is not stable. This seems to be caused by any physical reason because #8 produces rather big signal too. #21 is now stable, so it is put back.
:57 restart run.
6:25 high BP current again. → pulled out the cable of BP counter #9.
:31 JDAS ERROR - TIMEOUT branch 7 crate 3
7:54 " (~~three~~ times)
8^{00} ~ 16^{00} Pearce & Yamada on shift
9 25 Beams dumped
inner det. DL8 changed for ch. 1304 ~ 1311 : 9 35 Komamiya & Riseberg
10 15 New filling's ready
Run 11276 : ~~no tr~~ Timeout error from Branch 6 crate #3. (ID. DL8), the run didn't proceed.
The connectors were touched, and no more errors.
11:45 in crate 1 has been going missing frequently. Was loose connector in reset daisy chain. Cured (- I hope!) AB.
14.02 Stop for new filling.
15.02 New filling ready. Start run 11281
15.13 Run 11281 stopped to reload ~~NORD~~ NSDAR - displays were blocked.
15.29 Nord stopped for reinstallation of disk drive.
15.31 Restart Nord (not reload). Start run 11284
Big problems with the display - it is now completely blocked. Logging in to the NORD is also impossible. (Reload did not help.)
HEM has gone to consult with DC.
16:00 Naroska & Takeda on shift
16:20 Rebuilt YHDISP, YEDISP and YMENU. Run started. Logged onto a terminal and did several LI-FIs and other commands. At this point the terminals locked up (Nord seems to sit on level 1). Data taking proceeds normally. Thus I belive it is nothing to do with the Histogram or Event display. HEP

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E1>6GeV	T2 Bit 17 2T·E4·2tr.
11270	18/5/82	4:35	4:39	9.89	10.00	9.0	183	406	47.6	4.28	137	459	50	130
11271	"	5:12	6:38	10.46	10.76	10.9	3340	8002	869	94.8	2631	9779	1014	2707
11272	"	6:38	7:36	7.98	7.91	10.4	3449	8002	898	93.8	2638	9869	1027	2547
11273	"	7:37	8.31	5.89 at end of run	6.24	11.9	3190	8002	831	98.9	2314	10036	962	3136
11274	18/5/82	8.31	9.23	5.88	6.23	12.3	3051	8002	794	97.3	1964	9943	779	3152
11275	"	9.25	9.27	5.10	5.45	12.9	153	429	39.8	5.1	99	488	38	669
11276	"													
11277	18.5.82	10.24	11.30	10.58	10.21	10.0	3846	8002	1001	100	2960	9287	1153	2437
11278	"	11.33	12:43	~~8.67~~ 7.26	~~8.38~~ 7.03	8.0	4182	8002	1089	86.7	3009	9554	1145	2325
11279	"	12:44	14:00	6.25	7.02	6.9	4571	8002	1191	82.7	2946	9463	1128	2113
11280	"	14:01	14:02	6.07	5.89	8.2	38	162	23.0	1.9	55	184	25	29
11281	18/5/82	15.08	15.13	10.7	9.6	9.8	338	~~730~~	88	8.6	268	824	89	991
11282	"	15.15	15.18	10.5	9.4	9.0	149	362	39	3.5	129	388	52	464
11283	"	15.20	15.29	10.4	9.3	9.5	520	1025	135	13	412	1174	145	341
11284	"	15.31	16.27	9.9	8.9	8.0	3019	5904	786	63	2298	6816	871	1760
11285	"	16:30	17.50	8.5	7.6	6.7	4791	8002	1247	83.7	3110	9468	1243	2033
11286	"	17:52	18:30	7.0	6.2	6.2	1866	2829	485	30	1131	3360	483	656
11287	"	18:53	19:53	6.1	5.4	5.3	3549	4962	924	49	1991	5890	788	1063
11288	"	20:21	21.34	10.6	10.8	8.8	3998	8002	1040	91	3148	9305	968	2197
11289	"	21:34	22:33	8.4	8.7	7.2	3501	6459	910	65	2635	7092	970	1589
11290	19/5/82	23.32	0.41	9.8	9.4	8.3	4103	8002	1067	88	3055	9446	1098	2404
11291	19/5/82	0.41	1.58	8.2	7.9	10.3	4576	8002	1190	122	3118	9405	1091	2237
11292	"	1.59	2.48	6.8	6.6	6.5	2831	4758	736	48	1868	5537	707	1285
11293	"	8.55	10.13	11.1	10.1	8.9	3963	8002	1032	92	3167	9470	1068	2405
11294	"	10.13	11.27	8.9	8.1	8.5	4249	8002	1105	94	~~3178~~ 3177	9141	1165	2097
11295	"	11.31	12.17	7.3	6.6	6.6	2724	4607	709	47	1931	5278	682	1178
11296	19/5/82	13.59	14.25	11.24	10.13	11.8	1565	3538	407	48	~~1357~~ 1354	4440	420	1237
11297	"	14.27	14.52	10.0	9.1	9.0	1394	1805	363	32	1094	3285	384	813
11298	"	short run												
11299	"	15.05	15.17	8.8	8.1	8.3	446	953	116	10	367	1046	122	294
11300	"	15.15	16.31	8.56	7.85	7.6	4273	8002	1112	84.8	3185	9246	1076	2314
11301	"	16.32	17.41	7.01	6.44	7.0	3827	5824	996	70.2	2614	6350	903	1168
11302	"	18.37	~~18.45~~ 18.51	10.81	11.09	10.4	262	587	68.0	7.05	231	641	72	176
11303		18.47	18.57	10.37	10.69	9.5	589	1355	153	14.5	532	1509	194	434

N50	MIP	TOF	<L> ×10³⁰	∫Ldt Run	∫Ldt Exp	IBM/TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks
ON/OFF												
ON	ON	ON	6.91	1.08	3395.93	IBM	1.0	56	10	1	17.300	beams lost
"	"	"	7.15	23.88	3419.81	"	1.2	60	274	14	"	
"	"	"	7.20	24.84	3444.65	"	1.1	60	298	13	"	
ON	ON	ON	6.29	20.08	3464.73	"	1.0	63%	238	7	"	
ON	ON	ON	5.38	16.41	3481.14	"	1.15	60	204	4	17.300	
"	"	"	4.50	0.69	3481.83	"	—	60	9	0	"	
												CAMAC error. No trigger → killed
ON	ON	ON	7.72	29.69	3511.52	IBM	1.0	52	402	11	17.300	
ON	ON	ON	6.79	28.40	3539.92	"		58	342	9	"	
ON	ON	ON	5.65	25.81	3565.73	"	0.7	57	341	9	"	
"	"	"	4.62	0.41	3566.14	"		61	9	0	"	
ON	ON	ON	7.85	2.65	3568.79	IBM	1.05	66	29	1	17.300	
"	"	"	7.60	1.13	3569.92	IBM	"	63	20	0	"	
"	"	"	7.75	4.03	3573.95	IBM	0.9	61	44	1	"	
"	"	"	7.48	22.53	3596.48	IBM	0.9	58%	275	12	"	
"	"	"	6.10	29.21	3625.69	"	0.8	58	386	5	"	
"	"	"	5.39	10.05	3635.74	"	0.6	58	147	6	"	
"	"	"	4.54	16.10	3651.84	"	0.5	58	191	13	"	Beam dumped
ON	ON	ON	7.42	29.68	3681.52	"	1.1	58	348	9	17.300	Septant threshold lowered!
"	"	"	6.46	22.63	3704.15	"	0.8	57	281	10	"	Beam dumped
ON	ON	ON	6.36	26.08	3730.23	IBM	0.8	58	319	9	17.300	
"	"	"	5.54	25.37	3755.60	"	0.7	57	312	9	"	
"	"	"	4.67	13.23	3768.83	"	0.6	56	171	6	"	
ON	ON	ON	7.13	28.24	3797.07	IBM	.9	58	325	13	17.300	
"	"	"	6.50	27.60	3824.67	IBM	.75	57	381	12	"	
"	"	"	5.74	15.63	3840.30	"	.7	58	211	8	"	beams dumped
"	"	"	7.09	11.10	3851.40	"	.8	59	131	4	17.300	stopped to fix DL8
"	"	"	7.23	10.17	3861.57	"	.8	57	117	7	"	stopped for D. Lords
							.8					
"	"	"	6.81	3.04	3864.61	IBM	.8	57	39	0	17.300	
"	"	"	6.23	26.64	3891.25	"	.8	58	325	7	17.300	
"	"	"	5.22	19.97	3911.22	"	0.6	57	252	10	"	beams dumped
ON	ON	ON	8.25	2.16	3913.38	IBM	1.0	57	32	1	17.300	} both runs stopped for missing muon crate 3
"	"	"	8.78	5.17	3918.55	"	0.9	57	65	2	"	

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	T0 rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E1>6GeV	T2 Bit 17 2T·E4·2tr.

4 13/5/82

Further comments on the Terminal-locking syndrome: This also happens if you request a display & are not using other terminals. When the run ends the display then appears. Most odd. I can only think of rebuilding the whole system. — including)HENT (HELPdis)

18³⁰ Rebuilt SINTRAN (i.e ran)HENT) and then)DAS(on T4).
It works — now I leave.

19 10 Problems with DESY vacuum, so we continue with this filling.
19:53 Beams were dumped for a new fill.
Run 11288 lowered Threshold for BS₁ to .251 (DVM reading)
before it was .405.
No big effect on trigger rate: ~~rate~~ flash .405 .251
rate 8/691 40/851

~~Barrel~~ Barrel Septant Threshold is now left to .251 mV from now on to make J.O. happy.

20.56 Slow ID trip, paused run, ran up ID, start again.
21.07 " " " " " " " "

22:35 ID tripped due to Anode current.
When I switched on ID, HV input error occurred.
Call Komamiya.
22:45 Beams were dumped for a new fill.
HV input error several times, when we tried to switch on the I.D.. Resetting and trying to run up several times cured the problem (Bad contact?)

0.00 Wednesday 19/5/82 Jan Olsson & Fred Lobinger.

01.00 No events. Trigge box shows red light on, but cure suggested on the "Krehbiel Instruction Sheet" did not work. Reset successfully by STOP RUN / RESET EVENT / START RUN.
01.22 Same error, same cure. It is followed by: TIME OUT B2 C5
02.15 Soft I.D. trip.
02.40 Soft I.D. trip — HV input error — always occurred when tried to run with up. Komamiya called.
Expect refill of PETRA delayed by ~ 1hr due to DESY problems.
03.30 Beams lost anyway! — Still DESY vacuum problems

ON/OFF N50	MIP	TOF	<L> ×10³⁰	SLdt Run	SLdt Exp.	IBM TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

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4⁰⁰ ID:HV alarm not resettable. Riesebeng comes, arranges a reset feed to the troublesome alarm. Some sparkling is suspected in the switch-on-motor box: the alarm at the switch on moment is paralyzed by still active reset level. ∴ Problem solved.
6⁰⁰ Vacuum problem still, no beams. We take magnet down

6.50 Injection started; we run magnet up.

8⁰⁰ Heidb + Heue
8⁵⁰ beams back
8⁵⁵ high background, PKR optimizing
9⁰⁵ Luminum again
10⁴⁵ No triggers (red lamp on): reset event, start helps
10⁴⁷ ID soft out
12⁵⁴ Filling ready
13⁵³ IBM transfer error 54 subcrror 140000 Err cnt 2
14²⁵ During run 11296 DL81 of call 17 and 14 missing/fixed
14⁵⁰ Stopped run for D. cards to test disk drive
15⁰⁵ run again
15¹⁰ Error 53 subcrror 140204 ⇦ watch dog flag (system crate)
4 47 4 0 + last of IOX-errors ⇦ start pulse missing at T2-crate offline
15¹⁵ Start new run — o.k.
15²⁰ During this shift two DL8 faults were cured: since monday this week wire 32-37 showed funny timings
→ repaired
wire 176-183 showed bumpy wire map → DL8 replaced
15²⁵ ID soft out, BP current too high
15⁵⁵ " , BP current probably loose
16⁰⁰ F. Foster + H. Riesebeng
16 32 Run 11301 started
17 06 Plot record ok for new fill at 17.30
17 09 Brief manner of monitor distorts the calm!
17.26 Austin & Fred do a few tests on procate 3 — leave it back in perfect working order!
17.41 Stop Run 11301 for refill
18.34 New filling ready
18.38/45 Terminate Run 11302 & for muon crate 3
" " 11303 & for " " " upto calling Cluster Bell. Status module not connected.
18.58 Finally succeede a start run 11304

ID soft off	BP-current fluctuation
16 18	not observed.
18 36	"

Trigger Box RED LAMP ON: → Ext. Stop by true or spurious input signals from front LEMO cables. Spurious HV-offs in any Counter HV, ID down signal. Beam off signal. If pushing green button does not bring the green light on, the signal is still present. Pull out the cables one by one and try again! Also there might be a spurious Z in the CAMAC System or Crate.

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E₁>6 GeV	T2 Bit 17 2T·E₄·2tr.

6 19 May 1982

19 23 Quiet beam loss

20 00 New fill ready, start R 11305

20 13 Noisy eff. ID Trip made worst.

21 08 Run 11305 Ended.

21 25 Beam loss without alarm

21 51 "Short break" announced.

22 20 HSV : Göteborg = 0 : 3 ; Göteborg hat sehr verdient gewonnen, sagt R.D. Heuer

22 30 We detect a slight smell of burning electronics! Intens investigation reveals nothing obvious – we keep looking

22 56 Start run 11307 – still we have slight burning smell – check histogram wait –
$L = 9.2 \times 10^{30}$, with dead time

23 08 Histograms seem to be normal so far.

23 11 Smell is now almost non-existent

23 45 Smell has now disappeared completely

20. 5. 82

0 00 Odaka, Felst on shift

3:17 Beams dumped.

4:10 Next fill, HV on

5:53 Beams were partly lost, and then dumped for new fill.

7:10 New fill.

7:45 Beams lost

8 00 Heinzelmann & Rowe

9 45 No events No triggers → big red lamp on, push green button → big white lamp on, pause, continue → ok.
At the same time there was also a beam loss.

11 45 Austin & Fred arrive for work using crate 6 → prolonged crate 6 missing for duration of work. Then O.K.

16 00 20/5/82 Eckhard Elsen & Fred Loebinger

16 15 Standard histograms checked & all O.K.

16:25 IDAS error 62 6706 (4C2099 Q,x missing)
Near file for old IDAS sheet. Please handle with care!

17 00 Beams dumped.

Run	Date	Start	Stop	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	∫Ldt Run	∫Ldt Exp.	IBM/TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

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17.30 New beams

18.40 Soft I.D. trip.
During run 11323, currents of e^+ & e^- went to 0.00 on colour T.V. monitor.
(The PKR information on the other T.V. is also down). These "zero" currents will also be written on the data. Energy is, however, still correctly displayed on colour T.V.

19.45. Problem with PKR computer solved, currents now back on display (after start of run 11324).

19.50 Soft ID trip.

20.00 Another soft I.D. trip.

20.30 " " " "

20.33 " " " "

20.42

Why does the hard copy unit now produce ≥ 2 blank sheets along with each run summary? ← The feed switch was on.

21.20 Beams dumped.

22.50 New beams

23.00 Try to start run 11326. I.D. H.V. trip on switching on.
The Branch 5 crate 2 timeout. Changing Crate Controller, LAM grader, individually taking DL8's out, threatening the crate with a big screwdriver all of no avail.
Call Nozaki. He applies karate chop to the LAM grader (which we had already exchanged) and it works!

21. 5. 82 Wriedt & Kanzaki

0:00 ←

0:12 Soft I.D. trip.

0:29 Time out Br. 2 Cr 3 occurred once.

0:42 Another soft ID-trip

1:03 Time-out Br. 7, Cr. 3 once

1:15 Soft ID-trip

1:30 Time-out Br 2. Cr 3 once.

1:36 Soft ID-trip.

1:58 "No triggers" – problem: "Status 3", recipe on Trebbin's write-up to on the sequence of pushing buttons failed twice, but after pushing the "accept event" button the run continues.

2:20 Branch 5, crate 2 strikes again: time-out!
This time karate doesn't work at all! Changing LAM grader ... but no help!
Call Nozaki.

Run	Date	Start	Stop	at Run Start I_+	at Run Start I_-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	To rej. $\times 10^6$	T_1 Acc. Sum.	T_2 Acc Sum	T_1 Bit 2 $E_1 > 6$ GeV	T_2 Bit 17 $2T \cdot E_4 \cdot 2$ tr.
11304	19/5/82	18:54	19:23	9.95	10.28	8.9	1373	3014	357	31.9	1246	3351	423	909
11305	"	20.04	21.11	11.02	11.20	10.0	3578	8002	930	92.6	3066	9452	1103	2599
11306	"	21:11	21:28	8.71	8.37	8.4	977	2028	254	21.2	764	2327	296	552
11307	"	22:58		10.80	10.63	8.6	3811	8002	992	84.8	3284	8814	1150	2280
11308	20.5.82	0:02		8.74	8.64	7.4	4217	8002	1096	81.4	3388	8762	1250	1986
11309	"	1 13	2:36	7.2	7.1	6.1	4992	8002	1298	78.8	3355	8964	1179	1779
11310	"	2:37	3 17	5.9	5.9	5.7	2387	3633	621	35.2	1542	4064	506	739
11311	"	4 15	5:28	9.84	10.99	7.7	4337	8002	1128	87.4	3324	8965	1168	2157
11312	"	5:29	5:53	7.9	8.0	6.2	1413	2334	367	22.7	978	2465	333	476
11313	"	7 10	7:47	10.7	10.8	8.3	2172	4521	566	46.7	1897	4943	668	1290
11314	"	8:25	8:51	10.9	10.9	14.2	1440	2884	374	53.1	1094	3265	358	917
11315	"	9.39	10.44	10.97	10.93	10.2	3906	8002	1016	103	3177	9148	1103	2361
11316	"	10.44	11.56	8.82	8.85	7.4	4272	8002	1112	82.4	3185	9077	1068	2035
11317	"	11.56	12.48	7.39	7.40	6.4	3082	5056	802	51.7	2046	5717	704	1148
11318	"	13.16	14.18	11.13	11.14	8.9	3658	8002	951	85.0	3227	8962	1189	2338
11319	"	14.18	15.28	8.88	8.99	8.0	4204	8002	1093	87.6	3310	8962	1184	2107
11320	"	15.29	16.49	7.39	7.49	6.6	4773	8002	1242	81.4	3445	8856	1206	1861
11321	"	16.49	17.03	6.14	6.25	11.2	762	1097	198	22.2	493	1189	164	228
11322	"	17.31	18.33	10.77	11.04	9.1	3666	8002	953	86.3	3225	9026	1157	2415
11323	"	18.33	19.44	9.54	9.86	7.7	4138	8002	1076	82.9	3357	8752	1228	1880
11324	"	19.44	21.15	7.13	7.40	6.4	4930	8002	1283	81.7	3365	8882	1227	1799
11325	"	21.16	21.18	5.93	6.19	6.1	149	242	38.6	2.3	82	275	32	36
11326	TIMEOUT	PROBLEMS.		SCRAP !										
11327	21.5.82	0:04	1:15	8.30	8.74	8.3	4032	8002	1048	86.7	3154	9234	1169	2210
11328	"	1:15	2:17	7.36	7.22	15.3	3374	5610	897	134.3	2304	6323	843	1392
11329	"	4:33	5:10	9.21	10.01	11.7	2147	4312	558	65.4	1780	4825	654	1172
11330	"	6:35	8:02	6.57	7.28	6.1	5080	8002	1322	80.4	3414	9024	1208	1806
11331 - 11332 :	Junk													
11333	21.5.82	8:11	8:18	5.25	5.91	5.1	301	464	78.5	4.0	189	460	69	69
11334	"	8:47	9:59	10.82	11.05	10.2	3989	8002	1039	105.7	3318	8992	1202	2390
11336	"	10:01	11:04	8.27	8.55	11.3	3759	6892	979	110.1	2869	7539	1052	1752
11337	"	13:30	14:34	11.37	11.11	8.8	3804	8002	991	87.5	3323	9010	1234	2315
11338	"	14:34	15:19	8.88	8.80	8.0	2550	4898	664	53.1	2009	5602	715	1393
11339	"	15:30	16:48	7.63	7.57	6.8	4632	8002	1207	81.7	3357	8954	1192	1957

ON/OFF N50	ON/OFF MIP	ON/OFF TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp	IBM/TAPE	BP [V]	T_2 Rej. Ev. Fr. (%)	Bhabha	MH	E_{beam}	Remarks
ON	ON	ON	8.13	11.16	3929.71	IBM	0.9	58	148	2	17.300	beam loss
"	"	"	7.80	27.90	3957.61	"	1.1	59	352	12	17.300	—
"	"	"	6.98	6.81	3964.42	"	0.9	57	82	0	"	beam loss
"	"	"	8.17	31.15	3995.57	"	1.0	57	341	14	17.300	
"	"	"	6.77	28.54	4024.11	"	0.8	58	400	13	"	
"	"	"	5.45	27.22	4051.33	"	0.7	57	336	11	"	
"	"	"	4.49	10.71	4062.04	"	0.63	58	127	4	"	beams dumped
"	"	"	6.60	28.64	4090.68	"	1.0	57	360	17	"	
"	"	"	5.23	7.39	4098.07	"	0.73	55	95	5	"	beams partly lost
"	"	"	8.72	18.93	4117.00	"	1.0	56	237	7	"	beams lost
"	"	"	7.62	10.98	4127.98	"	1.1	63	114	2	"	beams lost
"	"	"	7.57	29.56	4157.54	"	"	57	364	10	"	—
"	"	"	6.48	27.67	4185.27	"	0.8	57	324	7	"	—
"	"	"	5.30	16.34	4201.61	"	HV	57	207	9	"	Beams dumped
"	"	"	8.44	30.87	4232.48	"	0.9	57	398	19	"	—
"	"	"	7.21	30.30	4262.48	"	0.8	57	357	11	"	—
"	"	"	6.01	28.63	4291.16	"	0.6	57	357	14	"	
"	"	"	4.65	3.55	4294.71	"	0.5	59	41	1	"	Beams dumped
"	"	"	8.13	29.81	4324.52	"	1.1	58	392	6	17.300	
"	"	"	6.96	28.81	4353.33	"	0.85	58	401	15	"	
"	"	"	5.49	27.05	4380.38	"	0.7	57	337	12	"	
"	"	"	4.74	0.71	4381.09	"	0.6	54	9	0	"	Beams dumped
"	"	"	6.92	27.91	4409.00	"	0.75 ~~0.55~~	58	362	14	17.300	
"	"	"	5.61	18.94	4427.94	"	0.70	57	229	10	"	Beams dumped
"	"	"	7.84	16.83	4444.77	"	0.95	58	201	8	"	
"	"	"	5.50	27.92	4472.69	"	0.75	58	335	9	"	
"	"	"	4.65	1.40	4474.09	TAPE Fill 129		54	18	1	"	Beams lost
"	"	"	7.75	30.90	4504.99	IBM	1.0	59	383	11	"	
"	"	"	6.81	25.59	4530.58	"	0.8	57	322	15	"	Beams lost
"	"	"	8.39	31.90	4562.48	"	1.05	58	406	12	"	
"	"	"	7.79	19.87	4582.35	"	0.9	58	236	8	"	
"	"	"	6.38	29.55	4611.90	"	0.8	56	372	11	"	

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T₁ Acc. Sum.	T₂ Acc. Sum	T₁ Bit 2 E₁>6GeV	T₂ Bit 17 2T·E₄·2tr.

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3:20 Beams dumped.
4:00 New filling ready. But we still have Time-out problem.
4:30 At last Heuer found a dead DL8 and changed it. → O.K., it works!
4:33 Start run 11329.
5:06 "No triggers" : Status 3
5:07 LG -HV- Alarm
One LG power supply failed due to "OVER CURRENT".
Distributor #8 caused this alarm so we examined all counters connected to it.
(pull out all cables and connect again one after another)
But after all of them were connected again, then the alarm was disappeared!
6:30 2 of the distributor ch. seem to be dead, it's probably due to the death of LG counters. But now we don't know which counter is dead exactly.
→ It was due to the death of the distributor channels. They were exchanged. (9ᵉᵉ T.K.)
8:00 Kobayachi, Glendinning on shift
8:05 IBM Error 54. They say it will take ~several minutes. → Write on mag. tape (Fil129).
8:18 Beams lost. HV of I.D. went down without any warning.
9:02 'No triggers', goto Krebbich box only to realize the ID has tripped quietly - Reset OK.
9:59 At the beginning of Run 11335 "READ HV ERROR" occured. Restarted new Run.
10:01 Muon crate missing. Faulty part : 8.
10:46 'No Triggers', goto Krebbich box with diagnostic sheet.. decide that there is a "Serious error in the question pulse sequence" so do the necessary (ie Red, white + green buttons) and the run continues.
12:50 Break because of "HF-Senderstörung". Magnet down to 500A.
13:15 Start Injection. Magnet on again.
14:00 Found another end cap LG ~~counter~~ ch. dead (#12). Signal from PM was checked to be all right. Reconnected the cable, then it started to come. It might be a loose connection of the cable.
15:25 "IBM BUSY, ERROR 53/5E--" ~~disappear~~ does not disappear. IBM people do not see this error, and PLUTO ~~is~~ is now running with no problem. Stop the run and restart worked.
15:40 Trigger 1 output : 66 missing. Signal from LG barrel sum #35 was there! Reconnect the cable, then it worked again.

16:00 Bartel, Rowe on shift.
16:05 SW histograms for run 11339 checked
look ok except for a noisy block #40 (#45) in the tagging system.
This has been there before. Never has been called reported.

ON/OFF N50	MIP	TOF	<L> ×10³⁰	SLatt Run	SLatt Exp.	IBM/TAPE	BP [V]	T₂ Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

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K. Heuer says the problem is well known. It does not affect the physics. The noisy block is low energy. (K. Heuer is right. This phenomenon is known for a long time and not really worrying. It is just not elegant. TK)

17⁰⁰ / 17⁵⁰ μ-crate 10 playing up a bit re crate missings.
slow ID trip
18⁰⁵ RT program YDEBUG has been removed from the standard ZDAS in order to make way for YTEXT - the new all-singing ~~error~~ message program. This has been installed but not yet connected into the ZDAS error message flow. This will soon happen. (HEM)

19:40 No trigger hang up with ~~no~~ except lamps off
When starting a dummy run to investigate the error, it disappeared again. Sorry we did not write down the trigger box status. We wanted to do it in the test run.
In the run with the hang up we had 1110 non existing LG blocks. (Run #11341) could the problem be related to spurious LG-signals ??
21:25 ID-trip
21:55 SW. histograms ok
22:30 The picture on the scope showing the ID-HV is shifted to the right probably to due to wrong synchronization.
We learn this problem to Mr. Heuer of the next shift.
22:45 ~~No trigger hang up with no lamps on~~
slow ID-trip
Run 11345 does not exist nonsense
23:40 The picture has returned to normal! (Don't know when)
23:50 At 8.3 mA in the machine, the white traffic light went on.
There is no attenuator to reset it. Krebbich should look at it.
The next shift should check test TDC's.
23:55 The white traffic light went off again without human intervention.

22.5.82

24⁰⁰ HEUER & HEDGECOCK. BOTH ARRIVE.
00¹⁰ YSPY DETECTED MISSING T2 INPUT TRIGGER V34 MISSING. RUNDOWN ID. AFTER RUN 11347 PAUSED. V34 FUSE REPLACED. (WIRE 816-834) ≙ 1200 EVENTS

Run	Date	Start	Stop	at Run Start I_+	at Run Start I_-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	To rej. $\times 10^6$	T_1 Acc. Sum.	T_2 Acc Sum	T_1 Bit 2 $E_1 > 6$ GeV	T_2 Bit 17 2T·E_H·2tr.	ON/OFF N50	MIP	TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L\,dt$ Run	$\int L\,dt$ Expt.	IBM/TAPE	BP [V]	T_2 Rej. Ev. Fr. (%)	Bhabha	Multi Hadrons	E_B	Remarks
11340	21/05	16:48	18:02	5.32	5.30	5.9	4261	6437	1110	65	2745	7580	893	1457	ON	ON	ON	4.93	21.00	4632,90	IBM	?	58	233	9	4.3	beams dumped
11341	"	18 42	19.42	10·21	10·83	11.7	3545	7227	924	108	2995	8334	1021	2150	"	"	"	8·05	28·53	4661·43	"	1.0	58	355	11	"	No triggers problem.
11342	"	19:45	20:53	6.92	7.53	8.2	4044	8002	1054	86	3285	9026	1181	2243	"	"	"	7.31	29.59	4691,02	"	0.9	58	362	12	"	
11343	"	20:53	22:02	5.85	6.44	7.8	3879	6692	1011	74	2806	7593	956	1582	"	"	"	6.01	23.32	4714,34	"	0.8	57	263	11	"	beams dumped
11344	"	22-33	22.46	9.96	10·08	8·8	664	1322	173	15.2	540	1552	185	370	"	"	"	7·80	5·18	4719·52	"	0·9	60	51	2	"	No triggers problem-
11346	"	22·48	23.59	8.07	8·22	7.7	4234	8002	1101	84.8	3341	9279	1189	2147	"	"	"	7.06	29.89	47 49. 41	"	0.85	59	373	6	"	11345 ARRAYS TO BE LOST.
11347	22/5/82	00 00	01 23	6.49	6.67	6.9	4622	8002	1201	82.8	3394	8984	1217	2042	"	"	"	6.36	29.37	4778.78	"	0 75	58	382	6	"	
11348	"	01 23	02 54	6.48	6.66	5.4	5400	8002	1405	75.9	3545	8754	1270	1601	"	"	"	5.29	28.56	4807.34	"	0.67	57	396	10	"	BEAMS DUMPED
11349	"	03 36	04 42	9.78	11.17	8·4	3942	8002	1026	858	3231	9114	1104	2302	"	"	"	7.68	30.26	4837.60	"	1.05	57	347	11	"	
11350	"	04 47	06 01	8.01	9.31	7.3	4314	8002	1143	83.4	3368	8939	1155	2004	"	"	"	6.48	28.46	4866.06	"	0.82	57	367	8	"	
11351	"	06 02	07 02	6.68	7.87	6.4	3584	5797	931.9	59.6	2441	6565	863	1345	"	"	"	5.46	19.58	4887.64	"	0.72	57	249	7	"	BEAMS DUMPED
11352	"	09·37	10:50	10.19	9.23	7.9	4163	8002	1082	85.1	3282	8993	1143	2215	"	"	"	7.62	31.73	4919.37	"	0.86	57	390	17	17.300	
11353	"	10. 50	12.02	8.52	7.67	8.1	4173	8002	1086	87.6	3140	9504	1110	2434	"	"	"	6.28	26.19	4945,56	0	0.83	58	329	7	"	
11354	"	12·02	13·02	7.22	6.46	7.0	3694	6663	961	67.7	2409	7542	837	1712	"	"	"	5.28	19.52	4965·08	"	,77	57	224	1	"	
11355	"	13.09	13:16	6.27	5.57	6.7	383	627	99.7	6.7	224	768	75	168	"	"	"	4.93	1.89	4967.97		0.74	59	20	1	"	Beams dumped
11356	"	22 08	2253	7.39	10.06	10.5	2696	6712	702	73.7	2270	7614	783	2297	ON	ON	ON	7.51	20.24	4988.21	"	1.2	51	247	3	"	
11357	"	23 05	0,16	6,1	8,5	7,9	4181	8002	1087	86.3	3216	9279	1192	2414	"	"	"	6.50	27.19	5015,40	"	1.0	58	330	12	"	
11358	23.5.82	0-18	1·17	6·06	8·46	7·4	3570	6454	929	68.7	2535	87627	885	1796	"	"	"	5·40	19.28	5034·68	"	,8	57	236	6	"	Beams dumped
11359	"	3,31	3,42	9.5	10.9	10,8	432	920	113	12.2	357	1025	126	313	"	"	"	7.52	3.25	5037.93	"	,95	58	31	3	"	DL8 units 392-399 missing
11360	"	3·45	4·50	9·41	10·84	8·8	3906	8002	1016	89.2	3108	9494	1103	2583	"	"	"	7.12	27.80	5065·73	"	,9	57	349	13	"	
11361	"	4.50	6.02	7.98	9.28	8,0	4266	8002	1110	89,3	3260	9272	1095	2267	"	"	"	6.36	27.15	5092.88	"	0·6	58	325	9	"	
11362	"	6·03	7.12	6.68	8.85	6.6	4152	6866	1080	71.5	2893	7670	1002	1671	"	"	"	5.55	23.05	6115·91	"	.6	56	295	19	"	Beams dumped
11363	"	11 25	12 15	10.09	10.35	9.1	2957	6168	769	70.3	2465	6992	861	1862	"	"	"	8.04	23.77	6139.68	"	0.88	57	293	6	"	RUN STOPPED TO ALLOW HTAKEDA TO CHANGE A MODULE IN THE LG TRIGGER SYSTEM. BUTTER RUN AGAIN STOPPED TO ALLOW HTAKEDA TO WORK ON LG PROBLEM.
11364	"	12 17	12 36	8.74	9.06	15%	1082	4025	291	42.1	2713	2553	1151	769	"	"	"	6.88	7.45	6147.13	"	0.78	60	93	2	"	
11365	"	12 50	13 20	8.08	8.33	21%	1777	7802	462	97,2	5939	3610	2256	1081	"	"	"	5,98	10.63	6157.76	"	0.77	60	123	2	"	Barrel blocks spinning
11366	"	13 20	13 26	"	"	30.8	296	1578	77	23,8	1965	545	451	154	"	"	"	5,34	1.58	6159,34	"	0,2	58	11	0	"	
11367	"	13 52	15"	6.93	7.17	6.9	4704	8002	1223	84.8	3210	9406	1111	1934	"	"	"	5,59	26,29	6185,63	"	0.67	58	280	8	"	
11368	"	15"	15 40	5,80	6.93	7.4		3026							"	"	"	4.64	7.55	6193.78	"	0,8				"	RUN SUMMARY LOST.
11369	"	16.35	17.12	11.19	11.44	10.9	2284	5450	572	62.6	2010	6488	725	1894	"	"	"	8.71	19.17	6212.35	"	1.1	58	241	11	"	terminated to repair LG-ADC's.
11370	"	18:00	19:05	8.41	8.71	8.7	3865	8002	1005	87.6	3097	9264	1188	2390	"	"	"	7.19	27.79	6240.14	"	0.9	57	362	11	"	
11371	"	19:12	20:09	6.96	7.24	11.5	3405	5637	885	102.0	2271	6467	834	1445	"	"	"	5.74	19.53	6259.67	"	0.63	57	228	10	"	
11372	"	20:14	20:48	5.99	6.27	7.1	2050	3171	533	37.9	1300	3592	490	712	"	"	"	5.29	10.83	6270.50	"	?	56	121	5	"	
11373	24.5.82	0:42																~16		6286.50		1.1				"	Lots of small runs due to crate SD4 problem.
11388			4:33																							

new record!

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E1>66GeV	T2 Bit 17 2T·E4·2tr.

22/5/82 00¹⁵ Run 11347 Restarted.
1⁰⁵ Std histograms look pretty normal } LG hit map barrel 1 chs 1–250 are a bit high,
4⁰⁰ Std " " " " } but not dramatically, don't call any Japanese
out of his beauty sleep

5³⁵ JDAS error 44 /703
8.00 Ejendinning & Naroska on shift
Petra injecting
10:39 ID slow trip – reset OK.
10:43 ANOTHER slow trip of ID.
11:01 " " " "
13:15 ZDAS altered to activate YTEXT whenever an error message appears. This should look much better! (HEI)
16.00 Heinzelmann + Minowa
21:50 Beams back.
Run 11356 2L8#47 partially missing. Radiect ok for Run 11357
23:25 Who has pulled out the stop cable from trigger box? We again have counts without ID (run 11357)

Sunday — the twenty-third day of May. Heuer & Rose have the misfortune to be on this shift.

The time approaching midnight, I am expecting Herr Hoyer directly (or even Herr Heuer!)

00⁰⁰ He comes.
03²⁰ DL8 wires 392-399 missing.
05³⁰ Standard tests OK
08⁰⁰ OLSSON & HEDGECOCK ON SHIFT.
11²⁵ VIVA! Beams restored and we start first run of shift.
11⁵⁰ Noisy blocks LG: 54-60 Call Takeda
Takeda tries many exchanges in trigger buffers. No effect, but problem is not in ADC.
After a while we continue data taking, Takeda will think
Run 11365 We have a high deadtime, due to T1, bit 12 = BC(2), Bmax > 2,5 GeV Related Problem.
Also T1: 8,1% Rate too high. It is a real problem, a noisy block going in the trigger
Problem due to noisy Photo tube, Disconnected NR 57 (1357) on 18M, in Dithmarschen
11367 Histogram: NR 54. :: Dead block from Run 11367 onward.
Nord dies just before beam dump R Sunny for 11368 lost. (Note terminals work, All hanging!)
16⁰⁰ B. Naroska relieves system

ON/OFF N50	MIP	TOF	<L> ×10³⁰	SLatt Run	SLatt Exp.	IBM/TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

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16.00 Naroska, Odaka on shift
Open some holes in the ceiling to improve air circulation.
Computer gives: "ring violation", every terminal block, we have automatically exited from JDAS somehow. We can restart it

16:30 Now fill
:35 start run 11369
error messages on the writer. YPARA 8: PED CRT 3 CH 127 IS > 500
" 121 "
" 103 "
" 97 "
LG hit map shows that the counters which correspond to above channels have very high hit rates.
18.08 Odaka has repaired bad LG channels. Now he is exhausted and we start run 11370.. (I exchanged an ADC chip, crate 3 station 3 #18. ... Odaka)
We get "error in opening file for read 34 1"
I suspect this has to do with HV, Start HV programs, they are ok.

2 JDAS ERROR 51 SUBE 504 (False Interrupt from DL8)

19:13 many JDAS errors → NO TRIGGER → PAUSE → CONTINUE → OK.
TIMEOUT branch 7 crate 3 ; I.D. ring 3 < pi
READOUT ERROR 51 SUBERROR 504 ** UNEXPECTED ** (3 times)
READOUT ERROR – MIP-16 out of sequence; YY = 1

20.40 Get many JDAS ERR 51, SUBE 504.
Talk to Heinzelmann and Cords. The error means that there is a bit on which should not be on. This is most probably created in the Lam grades. The suggestion is to shake it, clean the contacts and swap it against the Lam grades of the adjacent crate.
We will do this when the error comes again.

20:45 Magnet-trip, called K-group.
21.30 It was a water problem, which is fixed now. Magnet running up again. The "Schnellschluss ventil" had shut and 2 pumps were off.

21:45 Olsson has come to fix a crate (504). We made him change the Lam graders of crates 504 and 505. Probably now the whole readout won't work any more!
22.30 Petra keeps filling, accelerating and losing the beam every 20 min or so.

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E1>6GeV	T2 Bit 17 2T·E4·2tr.

24.5.82 D. Hmann + Hughes

0⁴⁰ Beams ready. Still problems with crate 504. We do the karate business to this crate (see p. 7) and it works. But only for a few minutes. Call G. Heinzelmann. He comes in. We exchange CC 504 with 505 and clean them.

.....

4⁰⁰ Problem with crate 504 cannot be solved (error 51 sub 504 **UNEXPECTED**) We have exchanged Lam Grader, Crate Controllers, Branch cables between crate 504 and 505. We have taken out one DL8 after the other, we have exchanged the power pack. The error comes and goes spuriously, but always in crate 504. Heinzelmann goes home, beams get dumped, this filling is lost.

#11378 ~ 2 DL8's removed, many small runs, partly with missing DL8's

5⁰⁰ New filling ready. We seem to find a working condition by pulling out the input cables of DL8 ~~25~~ 22

To: D. Cords or H.E. Mills: New problem: RING VIOLATION in ZDAS each time one wants to look at the muon chamber hitmaps! (see also p. 15 top)

8⁰⁰ M^c Cann & Yamada on shift. Matsumura called for DL8. Mills called re RING VIOLATION error.

9⁰⁰ Matsumura has exchanged faulty DL8 – we check with map and all looks ok now. Waiting for beam to be dumped.

Last run with faulty DL8 was 11393.

10⁰⁷ ZDAS rebuilt to cure the Ring Violation problem. Clearly the mangled-task syndrome

10⁵⁹ Run 11395: IBM transfer error 000054, sub. 140000, ERRCNT 2. IBM link tried again, it worked.

12⁰ Magnet trip. This one has nothing to do with the

ON/OFF N50	MIP	TOF	<L> ×10³⁰	SLdt Run	SLdt Exp.	IBM/TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

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previous one of last night. This time about 10 fuses blew. According to Pilhat that can be attributed to aging. The repair will take ~ 1h.

13⁰⁰ Magnet repaired. Start taking data.
At the request of P. Steffen this data (run 11396) is being written to tape (F11190) as well as to the IBM. P. Steffen will collect this tape from the counting room.

13¹⁹ IBM error 54 suberror 140000 ERR.CNT. 000002

13⁴⁵ Events stop triggering – have to stop run & ~~restart~~ start new one – that does the trick.

Run 11397 is also being written to F11190 as well as to IBM.

13²⁸ JDAS error Time out br 7-cr-3.
15⁰² Beams dumped.
15⁴⁰ New filling ready. Start run 11409.
16⁰⁶ "NO TRIGGER ...." → Status 3!.

16⁰⁰ — STEFFEN & HEDGECOCK.

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0.00 Nomamiya, Meier
2 00 No trigger. on Krehbiel box
T4 { Green LED ON; yellow " flickering; red " "
T1 - postpne ON
according to Krehbiel's writing we reset the trigger box → O.k.

1 30 ~3800 LG non-existing block on (from the run summary)
Call Minowa.
He said he will change the ADC processor ~~tomorrow~~ today.

2 20 During the LG pedestal parameter setting (at the beginning of run 11418 and 11419) run hung up
Call Minowa.
YPARA 4: WRONG DATA FORMAT IN LG-BANK PROCESSOR 2 ~~4~~ FIRST WORD IS NOT ADDRESS

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T₁ Acc. Sum.	T₂ Acc. Sum	T₁ Bit 2 E₁≥6GeV	T₂ Bit 17 2T·E₄·2tr.	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	⟨L⟩ ×10³⁰	∫Ldt Run	∫Ldt Exp.	IBM/TAPE	BP [V]	T₂ Rej. Ev. Fr. (%)	Bhabha	MH	E beam	Remarks
18 R	D	START	STOP	I_+	I_-	DT	T	R	$T_{0,all}$	$T_{0,rej}$	$T_{1,acc}$	$T_{2,acc}$	$T_{1,bit2}$	$T_{2\ bit17}$													19
11389	24/5/82	5⁰⁷	5¹³	11.1	11.4	9.0	362	809	94	9	318	859	117	260	ON	ON	ON	8.2	2.96	6289.46	IBM	1.0	56 %	41	1	17,300	
11390	"	5¹⁴	6¹³	10.7	11.0	9.2	3530	7778	919	85	3030	9049	1118	2378		"		7.6	26.80	6316.26	"		58	321	8	"	
11391	"	6¹⁴	7²⁶	7.39	7.64	7.5	4262	8002	1110	82	3906	9123	1118	2147		"		6.7	28.52	6344.78	"	0.6	54%	333	7	"	
11392	"	7¹⁶	8⁵⁰	7.58 6.13	7.83 6.35	8.1	5014	8002	1307	106	3308	9000	1195	1935	"	"	"	5.27	26.40	6371.18	"	—	53 %	328	10	"	
11393	"							253											0.75	6371.93	"			6	0		stopped to change DLS.
11394	"	9⁰⁰	9¹³	6.00	6.23	5.3	752	1052	196	10	451	1167	154	228	"	"	"	4.38	3.30	6375.23	"	—	57%	41	1	"	DUMP DELAYED ↓
11395	"	10³³	11³⁴	10.99	11.48	9.4	3631	7691	946	89	2958	8919	1048	2385	"	"	"	7.57	27.48	6402.71	"	—	57%	347	12	"	
11396	"	13⁰⁷	13⁴¹	7.15	7.60	16.2	2485	3728	648	105	1575	4122	533	843	"	"	"	5.21	12.96	6415.67	"	0.6	57%	149	7	"	also on MT. B = 0.002
11397	"	13⁵⁰	14²⁸	6.48	6.90	6.5	2873	4757	749	48.8	1940	5335	712	1084	"	"	"	5.31	15.26	6430.93	"	0.6	57	196	5	"	B = -4.8
11398	"	14³⁹	14⁵⁶	5.79	6.20	6.3	992	1534	259	16.2	632	1750	238	307	"	"	"	4.62	4.58	5435.51	"	0.5	58	64	4	"	// see page 13
11399 ? 11408	LG CALIB. RUNS Written on Tapes.																										
11409	24/5/82	15⁴³	16⁵¹	8.86	8.99	10.6	4061	8002	1058	112.4	3187	9159	1117	2400	"	"	"	7.07	28.70	5464.21	"	0.86	58	333	9	17.300	
11410	"	16⁵⁴	18⁰⁵	8.54	8.96	7.6	4339	8002	1130	85.3	3233	9134	1147	2297	"	"	"	6.23	27.01	5491.22	"	0.74	57	314	5	"	
11411	"	18⁰⁵	19²³	7.36	7.48	6.2	4624	7327	12038	74.4	3055	8232	1104	1771	"	"	"	4.88	22.55	5513.77	"	0.59	57	297	15	"	BEAMS DUMPED.
11412	"	19⁵⁸	21⁰²	10.69	10.94	9.5	3735	8002	972	92.4	3041	9566	1148	2740	"	"	"	7.17	26.77	5540.54	"	0.85	57	342	7	"	
11413	"	21⁰²	22¹⁵	8.73	9.01	7.5	4342	8002	1131	85	3159	9373	1150	2398	"	"	"	5.93	25.74	5566.28	"	0.72	57	325	7	"	
11414	"	22¹⁵	23⁵⁹	7.26	7.53	6.3	4984	8002	1298	82	3247	9189	1170	2094	"	"	"	4.88	24.32	5590.60	"	0.55	56	323	9	"	
11415	"	23⁵⁹	23⁴⁸	6.52	6.28	6.6	492	760	128	8.5	283	848	114	206	"	"	"	4.06	2.00	5592.60	"	0.48	53	28	0	"	BEAMS DUMPED.
11416	25/5/82	00:15	01:15	11.3	11.7	9.5	3569	8002	928	89	3072	9143	1117	2482	"	"	"	8.08	28.85	5621.45	"	0.9	58	334	12	"	
11417	"	01:15	02:23	8.9	9.4	12.2	3911	8002	1016	124	3108	8923	1120	2226	"	"	"	7.43	29.06	5650.51	"	0.75	57	330	10	"	
11418	run lost due to problems with parameter setting																										
11419	"	05:08	05:58	8.7	9.0	10.0	2964	5635	771	~~844~~ 777	2484	6486	811	1723	"	"	"	6.22	18.43	5668.94	"	0.7	57	244	11	"	
11420	"	06 15	06 20	7.3	7.6	8.3	334	674	87	7	253	794	96	218	"	"	"	5.98	2.00	5670.94		0.6	57	28	2	"	BEAMS DUMPED
11421	"	06:49	07:43	11.3	11.5	11.0	3209	8002	835	92	2922	9460	1097	2827	"	"	"	7.83	25.12	5696.06	"	0.9	58	351	14	"	
11422	"	07:44	08:48	9.1	9.3	13.2	3697	8002	962	127	3035	8783	1137	2260	"	"	"	6.80	25.51	5721.57	"	0.7	58	324	8	"	
11423	"	08:49	9:55	7.5	7.6	8.0	3986	8002	1038	82	3038	9141	1108	2220	"	"	"	6.49	25.85	5747.42	"	0.65	57	283	7	"	
11424	"	9:56	10:34	5.9	6.0	13.9	2228	3751	~~580~~	81	1351	4612	502	1147	"	"	-	4.20	9.36	5756.78	"	0.6	57	118	6	"	
11425	"	15:17	15:31	10.44	11.15	12.1	4636	2900	327	39	1165	3252	362	~~4057~~	"	"	"	8.11	10.21	5766.99	"	0.9	56	121	3	"	IBM link trouble
11426	"	15:53	16:25	9.33	10.01	8.7	1912	4000	497	43	1598	4589	560	1360	"	"	"	7.77	14.86	5781.87	FILE 122	0.74	57	161	9	"	
11427	"	16:25	17:27	8.53	9.19	8.1	3660	7206	952	76	2851	8345	982	2245	"	"	"	6.98	25.53	5807.40	IBM	~~0.6~~	57	339	11	"	stopped by IBM error.
11428	"	17:29	18:49	7.22	7.82	6.9	4725	8002	1228	84	3097	9535	1071	2349	"	"	"	5.46	25.79	5833.19	"	0.6	57	313	11	"	
11429	"	18:52	19:41	5.95	6.48	6.0	2784	4199	724	43	1735	4717	606	~~4921~~	"	"	"	4.60	12.92	5846.01	"	0.5	56	181	4	"	Beams Dumped

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T₁ Acc. Sum.	T₂ Acc. Sum	T₁ Bit 2 E₁>6GeV	T₂ Bit 17 2T·E₄·2tr.

ON/OFF N50	MIP	TOF	<L> ×10³⁰	SLatt Run	SLatt Exp.	IBM TAPE	BP [V]	T₂ Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

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25/5/82

Minowa and Kanzaki checked a new processor and put into crate 2 → same error.
Exchange a processor in crate 1 by a new one. we put old processor in to crate 2. →
'PROCESSOR 4' FIRST WORD IS NOT ADDRESS'
NORD HUNG UP during testing pedestal run → TAGGING
5 00 Re-load NORD
hung up again during pedestal setting Re-build RT-program YPARA
Re-load again → everything O.K.

Conclusion
"something was wrong with the computer"

5.50 several timeouts in branch 7 crate 3, one DL8 had red 'conversion' lamp permanently on. Exchanging DL8 and cleaning the contacts solved the problem.

6 50 JDAS Readout error - time out Br=2 Cr=3 ; TOF a FWD counters
7 14 YSPY detected error - μ- decifer missing ~~6~~ 20
8 00 Takeda & Warming on shift
8 06 "no triggers" due to soft rundown of ID.
8 25 IBM transfer error 00005F 40000 000002, we try link again, it works
8 28 " " " stop for several minutes, we phone IBM, they claim, everything is normal, we phone Pluto, they have problems too, but during this phone call IBM link comes back
8 40 histograms at end of run 11422 checked OK.
10 10 "serious error in question pulse sequence", cured by pushing red, white green button
JDAS readout error - timeout branch 2 crate 5 (LG ADCs) ← is there any connection?
10 20 M. Schmidt again installs additional terminal (unit # 37), test OK
10 30 Fill dumped
11 00 "short break"
12 20 phoned to PKR to find out about the short break : problems with bender magnet for positron injection
run down magnet to 2000 A
13 00 PKR asked to run up magnet to 7500 A.
14 00 Magnet went down with a big noise downstairs. 7500 A → 0 A
And compressor of air conditioning also went down.
The reason for both happening was the failure of a pump at the cooling pond.
14 35 air conditioning and magnet up again

21

25/5/82

15 05 new fill ready
15 38 IBM error 53 we phone F58 and IBM, after some arguments by Freese IBM agrees that they have a problem
for the time being we write on tape F11 122
16 55 room temperature alarme (the sonore voice in the hall) reset by a technician
16 00 H.E. Mills & T. Kobayashi on shift.

19 15 Time out BR 2 CR3 - TOF & FWD counters. Run continues
19 20 Soft ID trip
19 39 Beams dumped
21 00 No triggers- Following instructions this was "Serious error in question pulse sequence". Prescribed cure worked.
21 05 Readout - Timeout B3 Crate 2: Muon chambers Timeout. This happens several times. Note that the MUZAK program suddely starts printing lots of dud Muon banks, claiming the Crate 11 has trouble. Possibly its these long events that cause the time outs. Stopping & starting a new run does not help. Examine modules in Mu Crate- Module 10 has top light on- but this suddenly goes off. (Mean while the trigger box is also causing problem). Then quiet returns and all problems go away. Results- two worried shift crew & 1 disturbed Austin Ball (cos I phoned him)

21 40 The MUZAK program again complains about crate 11. Crate 10's module in the camac crate keeps having its top light stuck on. Hmmm. Lots of Crate 10 terminators are comming!

We also have some NO TRIGGER with box white lamp ON. Pause & continue produces READOUT ERROR MIP-16 out of sequence, and data taking continues.

After a fair percentage of the Mu timeouts we get NO TRIGGERS - parse/continue clears it

23 30 Austin Ball comes to investigate. ← near end run 11482 ZOAS kept sending linefeeds to T9 & would not respond. Reloaded N10 & rebuilt ZOAS.
23 35 A big 'crack' is heard from the hall. (Nothing to do with me!! AB)

24 05 Sanity status board in crate 10 was causing large number of end-of-crate markers to be added to data from this crate. Should be OK now. AB.

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T₁ Acc. Sum.	T₂ Acc Sum	T₁ Bit 2 E₁>6GeV	T₂ Bit 17 2T·E₄·2tr.
11430	25/5/82	20:24	21:10	10.24	10.42	14.4	2733	5274	711	10.2	2022	6110	707	1636
11431	"	21:11	22:25	8.84	9.04	11.5	4406	8002	1145	13.1	3172	9339	1141	2490
11432	"	22:26	23:25	7.31	7.49	13.6	~3540	~~8002~~ 2871						
11433	26/5/82	0:08	0:17	5.83	6.00	5.3	475	627	124	6.6	246	770	84	170
11434	26.5.82	0:52	1:26	10.57	10.65	9.5	1987	4350	517	49	1621	5136	588	1531
11435	26.5.82	2:03	3:08	10.84	10.78	9.5	3773	8002	982	91	3067	9605	1108	2862
11436	"	3:08	4:22	8.67	8.62	7.3	4378	8002	1134	84	3285	9152	1186	2322
11437	"	4:22	5:46	7.18	7.15	6.5	5024	8002	1307	84	3203	9529	1116	2235
11438	"	5:47	5:48	5.96	5.94	2.6	5	25	1	0.3	2	10	2	8
11439	26.5.82	6:30	7:30	10.84	10.55	9.4	3557	8002	925	86	3075	9223	1071	2652
11440	"	7:32	8:49	8.74	8.51	7.2	4608	8002	1199	868	3218	9545	1150	2398
11441	"	8:49	9:18	7.22	7.01	6.0	1721	2561	448	27.0	966	3196	320	732
11442	"	9:56	10:36	10.54	10.29	8.9	2381	5102	619	55.4	1953	5800	732	1604
11443	"	10:39	11:30	9.14	8.93	10.5	3050	5813	794	83.2	2259	6544	807	1567
11444		LOST												
11445	27.3.82	1:43	1:52	7.12	7.54	8.1	392	666	102	8.3	262	774	91	167
11446	"	01:59	02:14	6.57	6.97	6.2	850	~~1454~~	221	13.7	601	1620	204	395
11447		dummy												
11448	"	9:25	9:25	6.27	7.54	7.2	546	1006	142	10.3	391	1158	142	304
11449	"	10:12	11:26	9.02	10.90	2.5	2948	6056	767	65	2419	7058	831	1873
11450	"	11:28	11:35	7.76	9.07	9.4	403	778	105	9.8	334	881	131	193
11451		dummy												
11452	"	11:49	12:35	6.43	7.60	7.6%	2755	5360	717	54.7	2150	6238	829	1573
11453	"	13:10	13:32	5.95	6.96	6.3	1298	2228	337	21.4	895	2555	351	558
11454	"	22:17	22:33	4.62	4.66	4.9	941	1075	245	11.9	~~449~~	1479	152	258
11455														
11456	28.5.82	2:03	3:05	11.10	10.97	9.4	3701	8002	963	90	3230	10161	1159	2582
11459	"	3:06	3:36	9.12	9.00	36	1722	2451	448	162	1029	2988	351	759
11460	"	3:36	4:47	8.38	8.28	7.6	4240	8002	1103	84	3369	9807	567	2186
11461	"	4:55	5:03	6.86	6.79	13.9	261	637	68	9.4	211	886	66	331
11462	"	06:05	06:18	10.8	10.77	11.1	650	1669	169	188	621	2009	213	610
11463 – ~~11469~~ 11470	Lead Glass test runs written to Tapes 11/6/82.													

Run	N50	MIP	TOF	<L> ×10³⁰	∫Ldt Run	∫Ldt Exp	IBM/Tape	BP [V]	T₂ Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks
	ON/OFF												
11430	ON	ON	ON	6.36	17.38	5863.39	IBM	0.9	57	205	9	17.300	
11431	"	"	"	6.01	26.49	5889.88	"	0.7	57	315	10	"	
11432	"	"	"	4.59	16.72	5906.60	"	0.6		?	?	"	JDAS collapsed.
11433	"	"	"	4.09	1.96	5908.56	"	—	60	23	—	"	Beam dumped
11434	ON	ON	ON	6.55	13.02	5921.68	IBM	0.8	57	191	1	17.3	Beams lost
11435	"	"	"	6.82	25.74	5947.52	"	0.85	58	334	15	17.3	
11436	"	"	"	6.28	27.49	5974.81	"	0.65	57	345	13	"	
11437	"	"	"	4.60	23.11	5997.91	"	0.55	57	288	8	"	
11438	"	"	"	3.44	0.02	5997.93	"	"	56	0	0	.	Beams dumped
11439	ON	ON	ON	7.56	26.88	6024.81	IBM	0.85	58	332	9	17.3	
11440	"	"	"	5.64	25.99	6050.80	"	0.6	59	309	8	"	
11441	"	"	"	4.11	7.08	6057.88	"	0.5	58	80	2	"	Beams dumped
11442	"	"	"	7.66	18.25	6076.13	"	.85	57	225	5	"	
11443	"	"	"	6.72	20.51	6096.64	"	.65	57	267	8	"	Beams dumped. ← ELECTRONICS OVER TEMP
11444													LOST
11445	"	~~OFF~~	OFF	5.57	2.16	6098.80	"		59	27	0	"	
11446	"	OFF	OFF	5.34	4.54	6103.34	"	.50	56	47	0	"	BEAMS DUMPED
11447													~~Rubbish~~ Noise
11448	"	ON	OFF	5.53	3.02	6106.36	"	.55	56	28	2	"	Beams dumped tagging ADC-information
11449	"	"	"	7.31	21.55	6127.91	"	.70	59	224	9	"	
11450	"	"	"	7.08	2.85	6130.76	"	.62	61	34	0	"	} trouble with 11450
11451								.60					
11452	"	OFF	OFF	6.73	18.53	6149.29	"	05	58	261	5	"	stopped to fix tagging problem.
11453	"	"	"	5.63	7.31	6156.60	IBM	045	57	106	4	"	
11454	"	"	"	2.49	2.35	6158.95	"	0.55	59	30	0	"	Beam dump
11455	end of period, no beams any more — false alarm.												
11456	ON	ON	OFF	7.46	27.62	6186.57	IBM	1.0	60	343	10	"	
11459	ON	"	"	5.32	9.16	6195.73	"	.9	60	113	2	"	"No TRIGGERS"
11460	"	"	"	6.86	29.08	6224.81	"	.8	60	344	8	"	
11461	"	"	"	5.89	1.54	6226.35	"	.7	68	21	2	"	Beams Dumped
11462	ON	ON	OFF	9.62	6.25	6232.60	"	.9	60	85	3	"	stopped by magnet trip

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E₁>7.6GeV	T2 Bit 17 2T·E₄·2tr.

26-5-82

twice 0[52] Dietrich and Elsen on shift

1[20] Tens out branch 2 crate 3 Tof & FWD-counters , Run continued

2[20] " " " " " " "

2[52] Inner detector soft alarm. Reset. Notice that scale of HV display for inner detector is shifted. Only the first few channels are visible. Histograms for Chain and Anode current look o.k., though.

4[20] Tens out B2 C3 TOF + FWD counter

before 5[20] HV display for I.D. back to normal.

8[00] Duerdoth Yamada.

9[20] Beams Dumped.

9[55] New fill ready - stable beam — Missing Muon Crate 12 & the 5 (reset on CAMAC crate).

10[16] Time out B3 C2 – Muon Chis – continue.

10[35] IBM Error 54 Sub 1140000 Error 10 Run stopped itself. Phone IBM & they fix it.

10[37] Now runs — after 1 min again IBM Error 54 — But this time it's OK when we try link again.

10[65] IBM transfer error twice in a short period.

11[17] Sub Read Out Error 51, Sub Error 505 xx UNEXPECTED xx — had 4 of these in a minute — False Interrupt from DL8.

11[20] Alarm – it's too HOT – AIR CONDITIONING HAS FAILED.

Stop run, & turn off some electronics because it's 25° in the electronics room (it should be 17°)

15[30] Air conditioner stopped again. The weather is too good for Hamburg.

16[00] H.E. Mills & M. McCann On Shift

Since midday we have been off with readout problems - Induced by the heat maybe

16[30] Beams dumped.

17[45] Still off — problems reduced to about 2 (AC2 and A a LA (Tagg?) processor) but now its much worse - we cannot read the systems crate clock!

18[20] Camac clock ok now.

20[40] Temperature at end of Electronics room 18.5° Discs – 20.5°

22[60]	18.0°	20.0°
23[59]	17.5	20.0
02[00]	15.00	19.00
04[00]	14.5	18.0
06[00]	14.5	17.5
8[30]	15.5	17.0

PLEASE RECORD TEMPS EVERY TWO HOURS

Run	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	SLdt Run	SLdt Exp.	IBM/TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

26/5/82

22[00]. status. – 1) 12[00] electronics cooked & was switched off. turned on again when air conditioning had been fixed — but now left with several problems so couldn't take data.

2) TOF microprocessors — suspected not working — disabled from N10. -this merely makes the records longer.

3) H.V. values cannot be read (& so not checked). Reason not understood. monitoring turned off in N10. So we could run "blind".

4). Muon Readout — Time outs on ~~crate~~ camac C B3 C2 — Its Muon crate 10 and approx 5% of events are lost. Other events have spurious EOC marks but are otherwise OK.

5) If try to run we get assorted other CAMAC errors eg System Crate Watchdog

6) We tried a run (Mu crate 10 disconnected) & got some IO ring 3 time outs, but when we looked at events, the lead glass endcaps were full on & 1/3 barrell also. This is no good. Mr. Takeda says that this is one crate and he will come.

23[10] Decide to regenerate Nord system again (QHENT), but not with much hope. Did not conclusively appear to change much.

NOTE

Keep the TOF MIPROCS off (After a Nord reload - F14; F9; 2; Ø; F1)
Muon crate 10 will be missing (as serial link is unplugged).

For tomorrow daytime: Muon crate 10 to be investigated (if it hasn't gone away!).
New ribbon for Ops console (ask Herr Schmidtmann).

The LA processors in crates 1 & 3 have been swapped. The fault stays where it is : not the processors. Also the Tokyo High Voltage read program gets some spurious values for some settings (as does YVOLTS).

HEDSECOCK & KANZAKI ARRIVED DURING THIS CONFUSION!!

27/5/82
01[00] By changing a CAMAC readout module in the serial branch, the YVOLTS program (and TOKYO test) now works.

01[30] We checked the raw data during pedestal run, and we found that the data of crate #2 was completely funny. So that we decided to exchange the ADC processors #1 & #2 and see what will happen. At the beginning, the situation did not change. But after some time, junky ADC blocks disappeared. ????

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T₁ Acc. Sum.	T₂ Acc. Sum	T₁ Bit 2 E₁>6 GeV	T₂ Bit 17 2T·E₄·2tr.

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01⁵⁰ I log MUON onto 10 again – it still gives TIMEOUT ERROR every 10 secs or so. I disconnect it.
There was a hole in LG – End Cap hit map → Bad connections of ADC flat cables!

02¹⁰ YSPY told us there was no response from DL8 #19 and #20.
Also wiremap showed a hole
HOLE EVENTUALLY DISAPPEARED AFTER CHANGING DL8 (WIRE 152 ∓) TUNES. SEE WIRE MAP IN RUN SHEETS.

Then during all this trouble, we had a warning
SYSTEM CRATE COST 140 204 (OCT.)
SYSTEM CRATE WATCHDOG FLAG ON MB16 START PULSE MISSING OR T2 CRATE OFFLINE
Now we cannot start runs due to JDAS ERROR – System crate watchdog flag on.
COST = 140 204 (OCT).

04¹⁵ Ring D. Cords.

04⁴⁵ After carrying out instructions over the phone, the fault did not go away. We stay inoperative until the experts arrive in the (AM.) morning.

05⁰⁰ Bleeded the water in the "thatshield" reservoir and called in the K-group. They will get the "WASSER" LEUTE to top up the system when they arrive.
Ran down the ID. high voltage.

9¹⁰–16³⁰ Ball, Pedersen

8³⁰ Further problems:
① There is a water spill between the power house and the water/gas house. The origin of the water is unknown. K will break the ground to trace the water leak.

② The air condition system is too weak to keep the temperature in the counting house.
K will connect the air condition compressors to cold well water and hoses. Hopefully that is enough to keep the temperature down.

‖ We should continue to register the temperature in the counting house every ~2 hrs.

10⁰⁰ 1) watchdog error: some bad contacts in system crate
2) TOF2 microprocessor still has problems
D. C.

11²⁵ Time out board 7 crate 3 : 10 wire 3

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T₁ Acc. Sum.	T₂ Acc. Sum	T₁ Bit 2 E₁>6 GeV	T₂ Bit 17 2T·E₄·2tr.

ON/OFF N50	MIP	TOF	<L> ×10³⁰	SLdt Run	SLdt Exp.	IBM TAPE	BP [V]	T₂ Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

27/5/82 27

12:00 Of the tagging histograms, only 'tagging system patterns' is ~~filled~~ filled. Ball Wriedt.

12:31 Stop run 11452 for running to exchange system processor. (Updating afterwards the original one was exchanged to these Standard histos. Besides tagging, all OK, except bin 1218 of JETC WIRE MAP is low. The MUON system is being run down (see below) | PROCESSOR – ERROR (see 26., 17¹⁵). ~~Probably~~ all data since then do not contain tagging (DC – information) System processor re-exchanged. Tagging histograms look normal again.
Runs 11444 – 11452 ~~probably~~ affected.

NB MUON SYSTEM:
The shutdown of PETRA over Pfingsten is now due to start tomorrow at lunchtime. Since the schedule for preparatory work, prior to muon endwall chamber repairs next week, is very tight (because this work must be done during the PETRA-off time), we have started running down μ chamber volts.
- no muon data after 11:45 27/5/82 (start of run 11452)
- ignore empty, or patchy, muon histograms, and trigger 3 histograms
- mu-chamber gas feed will change to pure Argon at 14:00.
- YSPY constants file modified, so that muon digitisers are not checked, nor are T3 inputs and output.
- no more forward-μ triggers

13:27 Pluto request runs fill at 13:45. We agree.

14:40 New fill ready – but dumped. Heat alarm goes on balcony. Cooling system is functioning. Alarm horn on balcony has been disabled – so watch the control room temp.

15:12 Disc transfer error on Nord. Oh dear – TASSO currently have disc trouble as well. Nothing was particularly happening on our Nord, so carry on!

16⁰⁰ Olsson, Bethke 19.5°, 21° ~~at~~ electronics, cliché. Consider switching off DL8

16¹⁵ All DL8 off until further

16³⁰ PKR lost the beam during injection. Asked them if we may run down our magnet. They agree with "Teillast" of our magnet. So we run down to 5000 A.

16⁵⁰ 36,5° behind V34, all roof ventilators on level 2

20¹⁵ Pluto phoned: PKR has some problems, so that they are not able to refill for at least two hours, but it may also need days!

21⁰⁵ Run up magnet, want to start runs after switching on DL8's. Beams: 2×5,3 mA.
Temperature electronics: 16° C.
Initial problems with 1 DL8 and NORD: System crash watchdog flag on COST = 140204 (oct)
MP-16 start pulse missing or T2 crash offline
Next run OK, until suddenly: Memory parity error, Colour screen black, run continues stop run, then everything dead.
After several reloadings of Nord10: All OK, except that No colour TV is on. We exchange the colour unit. No effect.

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E>7.6 GeV	T2 Bit 17 2T·E>4·2 tr.

28 27/5/82

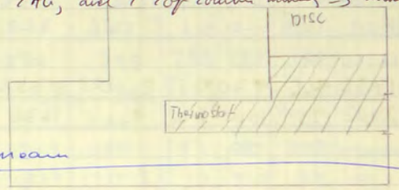
22.40 Kabelbrand bei DESY, kein Strom von Dienstag. All switched off here. Nightshift need not come!
23.03 PKR: Error found at DESY, Now fill in ½ hour! We call H-mann again. He will get his nightshift!
Note: we leave -the DL8's switched off
-the magnet at 1500 A
-the colour-monitor not working (at data taking look to run summary!)
23.49 Magnet high again
00.00 Fri. 28 May. Heinzelmann Duesdoth.
00.46 New fill. — turn on the DL8's.
1.15 ID trip - ½ of beams lost currents now only ~4mA
1.10 start run 11457. but then PKR decide to DUMP - We get in a Run of 58 secs.
But it looks as if we can run — without the colour TV.
1.57 New fill. Start Run 11458. — looking at Run Summary roter, event displays, & histograms - all looks reasonable
HIST of problems: a) No colour TV!
b) No TOF microc
c) Muon chambers off (so ignore all related error messages)
d) MAGNE - Camac Error during magnet reading, DVM error
e) LG Non-existing block on. (2000 in 6400 events - higher than 'normal')
leave REGULAR EVENT DISPLAY ON - so that we can tell that data is being taken.
3.26 Run 11458 hangs up. — don't know why — start new run; its OK
4.31 — FORTRAN ERROR! see printout — we still seem to be taking data — but event display has hung.
— it happens every event — when the field is written.
4.46 Run ends — So we RELOAD NOVO (N.B. Escape on terminal 9 gave nothing so we had to clear on front panel etc)
— It didn't work — still get FORTRAN error & display hangs up.
06.00 Ball replaces Duesdoth, run 11462 in progress
06.17 ---- just in time for: magnet trip. 'Vorlaufdruck primär' = water pressure, the first indication of which is a thousand 'clonk' from the Hall as some automatic valve closes.
End of run 11462
06.21 Beam now lost.
06.30 As expected, PKR will not try to refill. End of this running period.
DL8's are switched off. Petra has 'HF-sender steering'
06.40 Magnet fuse. Left at 1400 A. (We suspect the magnet control unit in power house was then switched to 'local', as we cannot now change mag. current).

2.6.82 ~17h Power failure in DESY

ON/OFF N50	MIP	TOF	<L> ×10³⁰	SLdt Run	SLdt Exp.	IBM TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

Run period III June - July 1982 29

11.6.82 A.W., Schmidhuber (Oben)
14.00 Stable beams for the first time. HV problem by switching on
Before our problems solved, beam was lost.
15.00 New beams. R 11471 started. HV missing in TAG, and 1 TOF counter missing ⇒ missing T1, T2 input, output
Nowhere at work again, H. Wriedt also
TAG-HV switched on manually at NIMRs 61 & 63.
TOF 73 disconnected, sparking.
Trigger input patched.



what does this mean

16.00 Stefan Nozaki on shift.
16.17 Start data taking without TOF 73. TOF 73 will be out for the whole 1 this running period. Navarska, Kreibich are working for trigger input signal.
16.52 Stop the run because several inputs of the trigger 1 are missing.
The crate was not on. ⇒ switch on DL
17.25 All experiment agree to a new fill at 18.00.
Kreibich & Ollen doing tests until dump - we get about 10 mins beam
18.00 Dump change forward counter ~~Fotr~~ TDC.
18.45 New fill is ready. Start Run 11475.
Forward counter #23 gives no signal. Pull out Push the Cable. This causes no trigger.
We stopped the run. and restart a new run. The DL
Tagging system H.V. came on normally.
19.36 Beams lost

21.00 I D trip. Run paused
21.59 DL8 161 (wire (#1289-1296) does not give signal.
DL8 161 is exchanged with a new one.
Ask for new beams.
22.54 Run # 11478 started
Check wire map and find that there is still a problem - would the DL8 we've chosen be wrong - we'll wait for Herr Rieseberg.
HE IS CERTAIN TO KNOW!

12 June 1982
0.00 M. Goddard and H. Rieseberg

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E1>6GeV	T2 Bit 17 2T·E+·2tr.	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	∫L dt Run	∫L dt Exp.	IBM/TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks
30																										31
11471	11/6-82	15⁰⁰	15:18	8.80	9.02			2889														0,7		50	1	17,3	Several HV errors, Not for analysis
11472	4	1618-	16:51	6.50	7.71	8.8	2015	3230	524	30	1421	3361	558	695												T2 input missing in 1 all for part fe
11473	"	16:53	17:26	6.00	7.15	5.9	2009	3369	482	31	1408	3528	492	759												
11474	"	17:52	18:01	5.14	6.20	5.1	541	820	~~854~~ 134	702	379	805	159	136												Beam dump.
11475	"	18:45	18:52	9.92	9.93	49.5	375	463	97	48	177	547	63	143												
11476	"	18:52	19:36	9.66	9.70	75	2660	5353	692	52	2274	5581	848	1333												
11477	"	21.01	21.22	9.1	10.04	6.4	941	1636	255	157	689	1672	250	356												
11478	"	22:55	0.01	9.75	~~10.27~~ 10.25	6.8	3874	8002	1008	68	3257	7510	1257	1565												Run stopped DL8 problem and problem in Branch 6 (timeout)
11479	12/6/82	0.02	0.43	7.9	8.33	6.1	2431	4870	632	39	2294	4091	1087	823												~~Run stopped by~~
11480	"	0.59	2.15	6.85	7.22	6.1	4514	8002	1174	71	4579	6470	2579	1032												Run stopped & replace DL8
11481								0																		Beams dumped.
11482	"	15 52	1657	9.11	10.62	7.7	3868	8002	1007	78	3332	8504	1308	1993				0	0			0.8				lost due to N50 problems
11483	"	16 57	1800	7.33	8.72	7.9	3750	8002	976	77	3082	8620	1297	1981	"	"	"	6.77	26.17	142.25	"	0.8	58	349	13	"	
11484	"	18⁰¹	18²²	6.1	7.4	7.8	1256	2718	327	26	1048	2973	448	674	"	"	"	5.67	21.25	163.50	"	0.7	58	256	8	"	
11485	"	1900	1959	10.56	11.25	14.7	3543	8002	921	136	3210	8582	1383	2222	"	"	"	4.96	6.23	169.73	"	0.56	57	74	1	"	Beam dumped.
11486	"	20⁰¹	2103	8.56	9.12	7.8	3734	8002	971	76	3429	8242	1597	1965	"	"	"	5.91	20.94	190.67	"	0.8	58	265	7	"	
11487	"	2104	2123	7.12	7.62	6.8	1150	2110	299	20	962	2188	461	444	"	"	"	5.44	20.30	210.97	"	0.7	58	254	8	"	
11488	"	2255	2357	10.55	10.48	9.4	3699	8002	963	91	3285	8345	1405	1984	"	"	"	4.55	5.23	216.20	"	0.55	60	67	1	"	Beam dumped.
11489	13/6/82	2357	0:34	7.90	7.77	7.5	2207	4524	574	43	1868	4693	821	8,1022	"	"	"	6.78	25.07	241.27	"	0.8	57	320	8	"	
11490	"	0:38	01:49	6.48	6.42	6.3	4281	8002	1113	71	3539	7979	641	1123	ON	ON	OFF	5.67	12.51	253.78	"	0.6	60	166	6	"	
11491	"	01:50	02:01	6.32	6.26	5.8	693	1199	180	11	547	1228	290	203	"	"	"	4.80	20.56	274.34	"	0.5	58	224	8	"	
11492	"	02:32	03:31	8.88	8.97	~~11.5~~	3531	8002	917	106	3177	8588	1538	2086	"	"	"	4.16	2.88	277.22	"	0.5	60	36	1	"	Beams dumped
11493	"	03:32	04:38	7.46	7.56	12.6	3946	8002	1027	129	3463	8230	1742	1729	"	"	"	5.60	19.78	297.00	"	0.8	59	281	8	"	
11494	"	04:38	05:48	6.36	6.46	6.3	4165	7704	1083	68	3573	7614	1760	1414	"	"	"	5.60	22.10	319.10	"	0.6	59	274	5	"	
11495	"	6:15	6:37	10.81	10.72	25.4	1260	8002	327	83	1012	6846	474	655	"	"	"	4.89	20.36	339.46	"	0.5	58	269	7	"	Beams dumped
11496	"	6:39	6:59	9.97	9.88	28.2	1142	6708	299	84	876	5710	420	552	"	"	"	6.11	7.70	347.16	"	.8	~~59~~ 59	101	1	"	T3 malfunction?
11497	"	7:07	7:42	9.08	9.17	7.3	2052	4236	534	39	1841	4716	894	926	"	"	"	5.31	6.06	353.22	"	.8	~~59~~ 59	74	1	"	" "
11498	"	8.11	9.07	10.77	10.64	8.9	3363	8002	875	79	396	8696	1487	2040	"	"	"	5.39	11.06	364.28	"	.7	59	138	5	"	T3 OK again
11499	"	9:08	10.10	9.00	8.90	7.7	3704	8002	964	74	3547	8119	1811	1696	"	"	"	6.87	23.10	387.38	"	0.65	58	290	6	"	OK
11500	"	10.10	11.21	7.66	7.58	6.3	4203	8002	109	69	3793	7667	1975	1357	"	"	"	5.94	22.00	409.38	"	0.6	58	285	8	"	"
11501	"	11.21	11.24	6.53	6.47	5.0	136	~~8223~~	35	2	92	205	53	37	"	"	"	5.13	21.56	430.94	"	0.44	57	275	9	"	"
11502	"	12.02	12.58	10.47	10.61	9.1	3353	8002	673	80	3286	8441	1580	~~2008~~	"	"	"	4.76	0.65	431.59	"	0.43	56	3	0	"	Dump Beams
11503	"	13:02	13:52	8.81	8.96	8.1	2956	6488	769	62	2779	6642	1378	1463	"	"	"	6.43	21.56	453.15	"	0.70	59	286	6	"	
11504	"	14 29	15.03	10.67	10.65	9.8	1727	4284	449	44	1731	4413	749	1114	"	"	"	5.97	17.15	470.80	"	0.70	59	193	11	"	Beam lost
															"	"	"	7.39	12.76	483.56	"	0.50	57	153	2	"	Short break

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E1>6GeV	T2 Bit 17 2T·E4·2tr.

32 12.6.82

0.43 Stop Run 11479 to exchange again DL8 # 161 (wires 1288 - 1295)

0.58 Start Run 11480 : DL8 # 161 ok

For some time BP-counters # 13 to 24 and 37 to 48 were off due to a switch-off of the lower NIM-crate

1.50 We ask for a new fill at 2.15

3.20 PKR has problems to get more than 6 to 7 mA / beam . SHORT BREAK shows up.

After 3 trips of the BP NIM power I exchange the control unit

Problems and Remarks

1.) Trigger 3 input and output is high at low channels

2.) Timing problems in DL8s # 116/117 and # 164/165 — no action for the moment.

3.) The T_2 acc-rate is about 15 to 20% lower than at end of May , may depend on beam conditions

3.50 Mr. Sarau from PKR informs us that one clystron has a vacuum leak. Exchange will take about 5 hours RESTART 9 a.m.

We tell ~~X~~ the other experiments , Pluto is not running

Run magnet to 1300 A , doesn't go lower

5.05 Phone call from Mr. Rossmanith (PETRA coordinator) : There are two possibilities :

a) Continue with lower energy (ca 15-16 GeV / beam) and exchange clystron in the access time on monday (today is Saturday)

b.) Exchange clystron now , but this is difficult since experts are missing . It will last till afternoon

As I don't want to decide myself I phone Mr. L. Criegee . He and the Plutogroup and myself are in favour of doing the clystron exchange now.

5.40 — So they are continuing the exchange work with one expert and non-experts.

8.00 Uebiel, Meier

8.10 Magnet current lowered to 500 A

8.52 Clystron has now been changed , PKR hopes that restart is possible at about 10.00.

10.47 Magnet on, injection starts

ON/OFF N50	MIP	TOF	<L> ×10³⁰	∫Ldt Run	∫Ldt Exp.	IBM / TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

33

12/6/82

13.10 New Filling ready, BP-current extremly low but this is caused by a switch-off of one BP Nim-crate (same as in the shift before -> exchange of control unit didn't help). Then beams are lost anyhow.

15.49 After starting run 11481 message: 'NORD 50 BUSY' appeared
-> run automatically terminated
reloading 2DAS helped, run 11482 is running successfully

16.00 Dittmann and Kanamiya

→ T3 looks crazy. Leave it for A.B. who comes on night shift

Discriminator crate (crate 2 from top in Rack 3) tripped again. We don't know when realized, when HV switched on and BP current was very low.
see : change of fan-unit did not help

Trigger box hang up. big green lamp on, green LED "T0 accept..." always on
cured with pushing big red lamp, reset event lamp, Run start lamp.

23.00 happend twice

NSO Test version running with P. St's new fast pattern recognition.
looks promising, no increase of dead time. (Runs 11488, 11489)
Test version is (DI) NSODAR with histograms 71: δ_z ; 72: δ_r ; 73: n_z ; 74: n_r
If somebody uses it, do not forget to switch on/off PATREC in NSO-Dialogue.

Another dead LG counter in End Cap (# 11) ~~seems that the PMT died~~, seems really due to the PMT, not due to the ADC cable connection. (M. Minowa)

13th JUNE 1982

Balk & Stiffen.

00:00 Run 11489 in progress (NSO test version)

00:37 Start run 11490

01:35 Request new fill at 02:00.

01:49 Start run 11491

02:00 Stop run. Dump beams.

Run	Date	Start	Stop	at Run Start I_+	at Run Start I_-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	To rej. $\times 10^6$	T_1 Acc. Sum.	T_2 Acc. Sum	T_1 Bit 2 $E_1 > 6$ GeV	T_2 Bit 17 $2T \cdot E_4 \cdot 2tr.$

34 13682

The FWDU trigger rate was ~3 x normal because of faults in strata 36 caused by bad contacts in pr-crate 4. The crazy towers in strata 3,4,5,6 in T3 i/p & o/p histograms are due to a faulty card in crate 8, but do not affect the trigger rate, since these strata are not included in the forward/p trigger. Have no spare card to cure this at present — it arrives on Monday! AB.

02:31 Start run 11492
02:40 TAG HFR 63 all channels ~0V. Reset according to prescription in file, and check tag histos — OK. Several 3R6 CR4 timouts.
03:05 trigger box hang: big green lamp on. green LED "T2 acc." on. cure by stop run, reset cut, start run.
03:30 Start run 11493. Histograms checked for 11492 — Look OK. spikes in ID ring 1 ⇒ spike in trig 1 i/p?
03:50 Many 3R6 CR4 timouts. Cured by waggling plugs at crate controller.
04:37 Start run 11494.
05:17 Request vac filling at 05:45.
6:25 Start Run 11495
T3 trigger does not work properly. no rejection by T3 for run 11495.
p-strata 34, 35, 36 almost permanently on. fast pulse board exchanged.
7:40 beam lost

Peterson, Rowe on shift

10[15] Standard hists taken — TOF TDC II #56 low. Jiggle wires → OK.

10[47] IBM link failure. Tried to link again → OK.

11[23] Beams dumped.

[5][09] Soft beam loss.

→ short break (trouble with PIA) DIA HF Amplifier trouble

16:00 Elsen & Darvill on shift.
18:09 Run 11505 started.
18:15 Pluto call to say that their computer has failed, and they cannot take data until tomorrow afternoon. Therefore we don't need to consult them on Petra refilling etc.
18:36 JADAS READOUT ERROR 44 - TIMEOUT branch 6 crate 4 : ID. ring 3 > pi —
18:59 Beams lost. The computer managed to update its value for the beam energy after the ~~magnets~~ pulse magnets had be brought to injection levels - i.e. 6.989, and used this value to calculate Lumi and $\int L dt$ for the run sheet. Therefore these values are wrong, and must be scaled by a factor of $\left(\frac{17.3}{6.989}\right)^2$

ON/OFF N50	MIP	TOF	<L> $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp.	IBM/TAPE	BP [V]	T_2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

35

13.6.82

19:25 PETRA cannot inject due to problems with water in ARES - PETRA transport system. "Short Break" - magnet would down to 500
20:47 They begin to inject, we would the magnet back up.
21:30 — start run 11506
22:29 JADAS READOUT ERROR 44 — See 18:36 earlier this shift.
22:53 Beams lost - Kurze Unterbrechung - Sender Ausfall. — They predict 20 minute in PKR. — we shall see.
23:36 New filling ready.
23:48 ID trip — Spark alarm — We were lucky to have the Riesenring live!

14.6.82

0.00 Dietrich + Minowa
0.10 3x IBM transfer error Tried to link again OK
2:40 4) YSPY detected error : DL8S giving noresponse 169.
acknowledge error.
2:47 4) YSPY again ! : "
acknowledge error.
2:55 Time out branch 6 crate 4 (DL8) several times.
Connector of DL8 No. 169 is not ok. It should be exchanged!
08:00 Glendinning + Steffen
8:10 Beams dumped - Start of Access
12:00 Temperature alarm ~24°C in Hardware room.
12:15 temperature OK now
13:00 Problem with magnet
13:30 Someone came and fixed the magnet.
14:05 Soft ID trip. - reset OK.
14:55 JADAS READOUT ERROR 53 - System Crate watchdog flag on
PARM=000000 (oct)
JADAS READOUT ERROR 47 MP-16 start pulse missing ~~on~~ T2 ~~5/8~~ crate 1 offline
→ several times
15:05 Soft ID trip - no apparent reason.

Possible cause of the Trigger hang ups:
When we changed the settings such as not to lose a bunch X during T2 reset, we set the T2 quat-in pulse a little earlier, but we did not change the latch gate in the readout. Thus when by coming a transition from (no) to (yes) occured close in time to the T2 qx pulse, the internal logics was not settled and the box tried to accept and reject at the same time. This caused the hangup. Cure (tentatively) I set the T2 Acc-pulse 50 nsec later. I shorted the ~~t~~ Hit latch Gate by 750 nsec, which was acceptible from the ~~the~~ view of the incoming pulses. Hopefully the hangup will disappear
Threlfall

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	T0 Rej. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 Bit 2 E₁>66GeV	T2 Bit 17 2T·E₄·2tr.	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	⟨L⟩ ×10³⁰	∫Ldt Run	∫Ldt Exp.	IBM/TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks
36																										37
11505	13.6.82	18:09	18:59	~10	~10	7.8	2932	6088	782.8	59.3	2545	6674	998	1526	ON	ON	OFF	7.52	22.07	505.63	16m	0.7	57	274	14	17.300	Beam tst.
11506	—	21:30	22:30	10.58	10.73	8.4	3632	8002	965.2	79.1	3301	8480	1305	1982	ON	ON	OFF	8.17	29.67	535.30	~	0.75	57	350	14	17.3	
11507	—	22:31	22:53	8.85	9.02	8.1	1321	2894	343.6	27.9	1198	3159	479	700	~	~	~	7.87	10.39	545.69	~	0.65	59	129	6	~	Beam tst.
11508	14.6.82	23:37	0:45	10.75	11.05	10.0	3658	8002	951	95.1	3164	8924	1251	2141	on	on	off	6.99	25.56	571.25	IBM	0.62	59	295	12	"	
11509	"	0:46	1:55	8.73	9.03	7.3	3991	8002	1038	75.2	3391	8701	1396	1739	ON	ON	OFF	6.27	25.02	596.27	IBM	0.66	58	318	8	17.3	
11510	"	1:55	2:07	7.31	7.6	7.2	682	1338	178	12.7	566	1342	253	243	"	"	"	5.48	3.74	~~595~~ 600.01	"	0.55	55	69	1	"	
11511	"	— very short run —																									
11512	"	2:11	2:15	7.05	7.33	8.2	175	361	454	3.7	141	356	56	66	"	"	"	5.33	0.93	600.94	"	0.52	54	12	0	"	
11513	"	2:19	3:27	6.92	7.20	6.4	4092	6943	1064	68.3	3109	7258	1243	1197	"	"	"	4.96	20.29	621.23	"	—	58	223	7	"	Beams dumped.
11514	14.6.82	3:53	4:53	10.38	10.99	9.2	3578	8002	930	85.9	3269	8626	1298	1932	ON	ON	OFF	6.94	24.82	646.05	IBM	0.9	59	317	11	17.3	
11515	"	4.53	6.02	8.65	9.23	7.1	4086	8002	1062	75.7	3410	8686	1333	1791	"	"	"	5.96	24.35	670.40	"	0.65	58	271	8	"	
11516	"	6.02	7.22	7.25	7.78	6.1	4665	8002	1214	73.5	3464	8700	1358	1535	"	"	"	4.76	22.21	692.61	"	0.55	~~58~~ 59	304	9	"	
11517	"	7.23	8.11	6.08	6.57	5.2	2918	4329	760	39.6	~~7886~~ 4642	744	660		ON	ON	OFF	4.18	12.20	704.81	"	0.46	58	159	5	"	Beams Dumped – Access.
11518	"	13:58	13:59																			0.67					no data taken
11519	"	13:59	14:40	9.99	10.49	7.7	2276	5313	592	45.4	1902	4985 5557	653	1148	ON	ON	OFF	7.37	16.78	721.59	IBM	0.67	44	214	8	17.300	Run stopped due to IBM link error → OK
11520	"	14:41	15:36	7.46	7.99	11.6	2737	7687	713	82.8	2089	~~4833~~	764	1234	"	"	"	6.67	18.27	739.86	"	0.64	13	245	9	"	
11521	"	16.06	16.14	6.83	7.34	6.8	481	1493	125	8.6	364	990	133	324	ON	OFF	OFF	5.89	2.85	742.69	"	0.55	0	31	2	"	
11522	"	16.17	16.29	6.65	7.16	6.5	724	1268	188	12.2	533	1393	183	249	ON	ON	OFF	5.90	4.27	746.96	"	0.50	59	55	4	"	
11523	"	16.30	17.16	6.45	6.95	6.5	2716	4692	707	45.6	2044	4926	648	918	ON	ON	ON	5.22	14.17	761.13	"	0.45	57	167	6	"	Beams dumped.
11524	14/6/82	18.33	19.43	9.52	10.88	8.1	4147	8002	1080	87.1	3240	9103	1171	1985	ON	ON	ON	6.30	26.14	787.27	IBM	0.7	59	307	7	17.300	
11525	"	19.44	20.08	796	9.23	14.6	1407	2464	366	53.6	955	2833	336	576	"	"	"	5.15	7.25	794.52	"	0.6	58	76	1	"	T1 hang up
11526	"	20.08	21.24	7.51	8.74	6.9	4535	8002	1181	81.5	3332	9016	1242	1666	"	"	"	5.62	25.47	819.99	"	0.6	58	303	6	"	
11527	"	21.24	22.02	6.23	7.38	6.1	2225	3594	580	35.3	1466	4030	514	696	"	"	"	4.82	10.72	830.71	"	0.5	58	123	4	"	Beams dumped.
11528	"	22.41	23.48	10.11	10.78	8.5	3875	8002	1008	85.7	3401	8711	1201	1903	"	"	"	7.26	28.13	858.84	"	0.75	59	327	18	"	
11529	"	23.49	23.58	8.17	8.89	7.6	565	1105	147	11.2	447	1197	168	252	"	"	"	7.22	4.08	862.92	"	0.6	58	56	2	"	Beams lost.
11530	15.6.82	3.12	4.22	8.95	10.40	9.3	4027	7561	1047	97	3331	7866	1160	1528	"	"	"	7.38	29.73	892.65	"	0.7	57	364	12	17.300	with FADC, but not properly read
11531	"	4.22	5.31	7.08	8.49	6.5	4084	7043	1062	69	3167	7284	1026	1256	"	"	"	6.56	26.77	919.42	"	0.53	57	327	7	"	Beams dumped
11532	"	6.30	7.16	10.28	10.42	11.1	2711	8002	705	78	2810	6460	906	1532	ON	ON	ON	8.93	24.21	943.63	"	0.75	58	295	10	17.30	
11533	"	7.16	8^{02}	8.78	8.99	10.4	2728	8002	709	74	2575	6320	927	~~7786~~ 1323	"	"	"	7.96	21.72	965.35	"	0.70	58	261	10	"	
11534	"	8^{02}	8^{15}	7.62	7.82	9.0	685	1742	178	16	578	1429	191	262	"	"	"	7.38	5.06	970.41	"	0.65	59	56	1	"	Beams lost
11535	"	9^{27}	9^{44}	9.8	~~10.4~~	~~9.4~~	929	2324	241	23	825	2093	304	435	"	"	"	8.23	7.65	978.06	"	0.68	58	99	4	17.3	} run stopped for VK 8
11536	"	9^{53}	10^{08}	8.8	9.5	8.8	850	2323	221	25	998	1737	245	349	"	"	"	7.68	6.53	984.59	"	0.60	56	78	2	"	} exchange with
11537	"	10^{11}	10^{37}	8.3	9.0	8.3	1511	3474	393	33	1201	3097	429	614	"	"	"	7.11	10.75	995.34	"	0.55	58	136	2	"	
11538	"	10.42	10.51	7.6	8.3	7.0	4078	8002	1061	75	2894	7318	980	1252	"	"	"	6.17	25.16	1020.50	"	0.51	58	307	10	"	

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E1>6GeV	T2 Bit 17 2T·E4·2tr.

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Monday 14/6/82. 16.00. Beate Naroska & Fred Loebinger

Matsumura fixed DL8 crate.
We switch mirror off to by-pass System crate watch-dog error.

16.30 Reset mirror — all o.k.

15.10 Pluto back on the air — please keep informed of beam dumps etc.

15.15 Beams dumped for refill.

18.30 New beams ready.

18.35 Soft I.D. trip

20.06 Trigger hang up, first T1 postpone lamp on, Status 3 of Krehbiel's note.

22.00 Beams dumped.

22.40 New beams ready.

22.42 Soft I.D. trip.
Here ~8 noisy wires in ring 1 of ID at start of fill. This gradually reduces to ~1 by end of beams (at dumping). ⇒ spike in T2 i/p.

23.58 Beams lost

Tuesday 15.6.82 0⁴ Ph. Rowe + A. Wagner

3⁰⁹ We finally have stable beams
run 11530 with FADC-readout on. But FADC-bank is not read out for the time being. D. Cords, please check! So FADC-readout is abandoned for now.

4²² Trigger hang-up inspite of H. Krehbiel's cure.
We stop the run and start a new one. All ok.

General comment: µ crate 10 has been playing up more frequently than I would like. Resets ok.

Genuine DL8 bit check error in DL8 #'s 165, 166, 167 since run 11528

5³⁰ new filling requested
6³⁰ continue data taking

ON/OFF N50	MIP	TOF	<L> ×10³⁰	∫Ldt Run	∫Ldt Exp.	IBM/TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

15.6.82

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8⁰⁰ Feist, Whittaker

Runs # 11534 – # 11537 tried to fix DL8 bit problem in DL8's # 165, 166, 167
DL8 # 165 exchanged
166 exchanged (definitely faulty)
Crate controller exchanged → # 167 o.k.
Result: # 165 not yet cured. I will try again this afternoon 11¹⁰ RBg

13⁴⁰ Synchrotron got problems, rem magnet down to 4000 A
15.00 Fill in progress. Run the magnet up to 7500 A.

16.00 15/6/82 Hans Rieseberg & Fred Loebinger.

17.30 Beams lost.
Herr Rieseberg attacks the DL8. # 165. Exchanged again → o.k. in Run 11546
TOF 55,56 MEAN TDCII (channels 54,55) are low. Beate Naroska proposes not to change the TDC – there is no good spare –, but to check the pulses what we have done – see below.

18²⁰ The sign SHORT BREAK is already on for half an hour. PKR has problems with double and triple bunches

18⁴⁰ RESTART 19.30

20⁵⁰ For the third time they have lost the beams at 9 GeV

22.15 New beams ready.
Start run 11546 — Using F8 to have FADC readout.

22.17 Soft I.D. trip
Beam optimization.

for TOF 55,56: Discriminator output ~12 nsec, others have ~30 nsec. Lengthen of pulse does not improve.
All TDCs, which are served by this discri. are affected. Exchange discriminator → ok

23⁰⁶ Start Run 11545 without FADC

16.6.82

0⁰⁰ Haidt and Komamiya

0⁵⁰ Trigger hang up reset ok.
2(TO accept steadily on T1 postpone on)

0⁵⁶ JDAS error Timeout branch 2 – crate 5 (LG ADC's)
1⁰⁰ " " " 3 " 2 (Muon chamber)

1⁰⁵ Beam lost I.D. trip.

Run	Date	Start	Stop	at Run Start I_+	at Run Start I_-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	To rej. $\times 10^6$	T_1 Acc. Sum.	T_2 Acc. Sum	T_1 Bit 2 $E_1 > 6$GeV	T_2 Bit 17 $2T \cdot E_4 \cdot 2tr.$
40 Run	Date	Start	Stop	At run start I_+	At run start I_-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	To rej. $\times 10^6$	T_1 Acc. Sum	T_2 Acc. Sum	T_1 bit 2 $E_1 > 6$GeV	T_2 bit 17 $2T \cdot E_4 \cdot 2tr.$
11539	15/6/82	11.52	12^{32}	6.36	7.04	6.7	2383	4619	620	41	1918	4043	574	626
11540	15/6/82	13.38	$13.^{60}$	9.96	10.40	9.4	71	204	18	2	70	153	25	39
11541	15/6/82	1505	15.59	10.06	10.45	10.7	2939	8002	765	82	2352	7294	775	1696
11542	"	16.00	16.52	8.43	8.38	9.8	3000	8002	781	76	2217	7229	754	1585
11543	"	1653	1731	7.16	6.78	7.8	2003	4076	521	40	1490	4205	482	891
11544	15/6/82	22.19	22.59	8.77	10.26	8.4	1943	4092	506	42	1593	3679	489	754
11545	"	2307	012	7.77	9.20	7.6	3854	8002	1002	77	3201	7211	1052	1307
11546	16/6/82	012	105	6.32	7.75	8.8	3046	5927	793	69	2507	4783	671	797
11547	"	254	347	10.30	10.42	9.7	3128	8002	814	79	3089	6955	965	1616
11548	"	349	4.44	8.74	8.92	8.7	3311	8002	787	75	2969	6785	966	1385
11549	"	445	549	7.28	7.89	7.0	3844	7757	1000	90	3036	6837	933	1230
11550	"	632	710	10.13	10.81	22.2	2079	8002	541	120	1732	2732	10294(69)	2978
11551	"	711	745	9.28	9.43	19.9	2031	8002	529	105	1777	7852	630	3239
11552	"	745	814	8.37	8.56	21.7	1534	5215	400	87	1236	5232	393	2125
11553	"	816	902	6.97	7.18	14.9	2673	8002	696	104	2002	8286	674	2940
11554	"	902	0955	695	7.16	9.4	2847	6527	741	69	1954	7056	655	2064
11555	"	11.28	12.05	9.24	10.29	8.9	2196	4978	572	51	1693	5072	566	1271
11556	17.6.82	02:41	03:32	8.35	9.87	9.2	3093	8002	805	74	2494	6705	869	1433
11557	"	03:33	04:31	7.25	8.69	10.0	3331	8002	867	87	2572	7485	908	1814
11558	"	04:32	04:36	8.26	7.59	23.1	186	330	48	11	115	410	45	162
11559	"	05:12	06:21	9.63	10.61	8.2	4029	8002	1047	85	3431	8469	1201	1979
11560	"	06:26	07:07	7.99	8.93	7.6	2509	4681	653	50	2049	5067	712	1078
11561	18/6/82	3^{53}	3^{57}	10.21	10.34	10.6	298	844	77	8.2	230	714	80	155
11562	"	3^{58}	4^{57}	10.01	10.16	10.7	2797	8002	727	77	2386	6463	809	1428
11563	"	4^{58}	5^{59}	8.51	8.68	9.6	2946	8002	766	73	2353	6383	789	6906
11564	"	5^{50}	6^{14}	7.46	7.61	8.7	1348	3376	350	30	1022	2660	352	2745
11565	"	8^{04}	8^{47}	10.0	10.5	11.1	2584	8002	673	75	2102	6070	729	1417
11566	"	843	858	8,9	9,4	20,7	583	1705	151	31	419	1239	140	261
11567	"	859	941	8,7	9,1	10,5	2539	8002	660	69	1899	5546	646	1180
11568	"	941	10^{41}	7,7	8,1	11,4	2246	8002	584	66	1522	4707	485	605
11569	"	13^{14}	14^{10}	9,2	9,3	10,2	3027	8002	788	80	2440	7342	829	1785
11570	"	14^{10}	1511	9,2	9,3	10,8	3527	8002	977	99	2625	7651	855	1717
11571	"	18^{22}	18^{46}	10.8	10.6	10.2	1369	3524	356	36	1256	3307	469	780
11572	"	18^{57}	19^{11}	9.8	9.6	9.7	821	2066	213	21	735	1993	272	502

Run	Date	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	$\langle L \rangle \times 10^{30}$	$\int L dt$ Run	$\int L dt$ Expt.	IBM/Tape	BP (V)	T_2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks
41 Run	Date	N50	MIP	TOF	$\langle L \rangle \times 10^{30}$	$\int L dt$ Run	$\int L dt$ Expt.	IBM/Tape	BP (V)	T_2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks
11539	15/6/82	on	on	on	5.36	12.8	1033.30	IBM	0.45	58	148	3	17.3	beams dumped
11540	15/6/82	"	"	"	9.55	0.68	1033.98	IBM	0.73	54	8	1	17.3	Beam lost.
11541	15/6/82	ON	ON	ON	6.57	19.30	1053.28	IBM	0.80	60	218	7	17.300	
11542	"	ON	ON	ON	5.94	17.81	1071,09	"	0.65	58	210	7	"	
11543	"	"	"	"	4.92	9.86	1080.95	"	0.5	58	103	3	"	Beams lost.
11544	15/6/82	ON	ON	ON	6.54	12.71	1093.66	IBM	0.8	56	149	7	17.300	with FADC bank
11545	"	"	"	"	7.07	27.24	1120.90	"	0.6	57	333	14	"	
11546	16/6/82	"	"	"	5.27	16.07	1136.97	"	0.46	55	176	1	"	Beams lost
11547	"	"	"	"	8.89	27.80	1164.77	"	0.75	58	325	15	"	
11548	"	"	"	"	7.95	26.32	1231.09	"	0.57	57	343	9	"	
11549	"	"	"	"	6.46	24.84	1255.93	"	0.51	57	271	12	"	Beam lost
11550	"	"	"	"	6.90	1436	1270.28	"	0,88	60	191	8	"	
11551	"	"	"	"	5.84	11.86	1282.14	"	0.5	61	159	4	"	
11552	"	"	"	"	5.09	7.80	1289.94	"	0.4	61	91	3	"	
11553	"	"	"	"	4.78	12.77	1302.71	"	0.77	60	102	8	"	
11554	"	"	"	"	4.14	11.80	1314.51	"	0,78	60	160	6	"	Beams lost.
11555	"	"	"	"	6.82	14.98	1329.49	"	0.8	57	181	9	"	Beams lost ~~ID~~ & magnet trip.
11556	17.6.82	ON	ON	ON	7.29	22.56	1352.05	--	0.65	57	293	9	17.3	
11557	"	--	--	--	6.07	20.22	1372.27	--	0.65	59	273	12	--	
11558	"	--	--	--	4.16	0.77	1373.04	--	0,55	58	11	0	--	Beams lost
11559	"	ON	ON	ON	8.04	32.38	1405.42		0.75	58	418	14	--	
11560	"	--	--	--	6.73	16.89	1422.31		0.6	57	226	5	--	beams dumped. machine shifts start
11561	18/6/82	"	"	"	8.71	2.60	1424.91	"	0.75	57	33	2	"	LG problem. Stopped run.
11562	"	"	"	"	7.90	22.09	1447.00	"	0.70	58	282	15	"	"
11563	"	"	"	"	7.09	20.90	1467.90	"	0.6	58	243	10	"	"
11564	"	"	"	"	6.23	8.39	1476.29	"	0.5	58	112	1	"	" Beams lost
11565	"	"	"	"	7.44	19.27	1495,52	IBM	.7	59	232	5	17.3	
11566	"	"	"	"	7,08	4,13	1499,65	"	.7	57	53	0	17,3	
11567	"	"	"	"	7,11	18,05	1517,70	"	.65	58	220	2	17,3	
11568	"	"	"	"	6,08	13,66	1531,36	"	.67	57	156	4	17,3	
11569	"	"	"	"	6,86	20,75	1552,11	"	.73	57	260	12	17,3	
11570	"	"	"	"	6,59	23,24	1575,35	"	.67	57	243	10	17,3	
11571	"	ON	ON	ON	9.17	12.56	1587.91	"	0.78	54	167	4	17.3	
11572	"	ON	ON	ON	8.34	6.85	1594.76	"	0.75	55	97	1	"	

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E1>6GeV	T2 Bit 17 2T·E4·2tr.

16/6/82

2.50 New beams ready
4.25 JPAS error timeout branch 3 crate 2 (muon ch).
4.50 Trigga 3 I/P ~~error~~ missing (ST 29, GP 2)
6.45 Trigger 1 input missing (12-23)
7.01 again "
7.06 again "
several times trigger 1 missing (12-23)
7.50 JPAS readout error 45-MP-16 analysis incomplete YT=1.
7.59 Trigger hang up (the same condition as before)
JPAS ERROR 44 timeout branch 2 crate 5 (LCG ADC's)

8.00 Ball Matsumura
08:10 YSPY reports trig 1 i/p missing channels 12→23. Confirm this by inspecting histogram. Is beam-pipe counters. Muid NIM crate (rack 3 crate 2) has tripped. Stop run + reset via power off/on. Fault had resulted in there being no reading on BP meter.
Start run 11553 — trig 1 i/p now OK.
09.40 BP NIM crate tripped again. off/on works.
8:45 at currents of ~7 mA / beam the luminosity (deadtime corrected) is only $L=(5\cdot10^{30})$ [Tasso: 5.7, Pluto: 5,7]. We ask PKR to optimize luminosity
9.02 Start run 11554
09.55 Beams lost
10.10 Changed power pack in BP NIM crate.
11.00 Burger (temp. coordinator) informs us that access will be arranged next Monday morning (21/6/82) to enable us to change TOF phototube.
11:27 New fill ready. Start run 11555
12:05 Beam lost. ID & magnet trip. PETRA TV + beam-scope go blank. Power failure?
End of run 11555.
13.55 K have reset magnet.
15.40 "Shot Break".

16.00 Watanabe Kawagoi
Short break continuing.
16.50 Short break becomes A+1 defect ~ start ~ 18.30.
13:00 Muon crate start & reset system recalled (all crates). Discrimination added. If timeout errors (BR2 C2), or frequent crate missing messages develop, call AB, IG or PR (or FKL — barracks room 15)

Run	Date	Start	Stop	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	∫Ldt Run	∫Ldt Exp.	IBM TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

16/6/82
19:30 START CA 20:30" Run down magnet to 2000 A.
22,35 Bode for 'SHORT BREAK'!
23.05 Injection. Magnet current 7500A.
23.33 Just reached 17.3 GeV then lost the beam again!

17/6/82
0.00 Darrill & Haidt on shift
2.29 After many hours we get a successful filling
2.39 beams look acceptable now so we start run - but find that we must first load N-50
04:10 we notice beam pipe current is high and get a warning about getchamber current being high (faults part 93)
we switch off ID, pause run, and wait for clean conditions - only a couple of minutes are necessary.
Loud noises are heard from the hall - sound like electric sparks - we are sure they are coming from the PETRA racks at the bottom of the stairs, but see nothing unusual. we decide to wait and watch & see if we can locate the breakdown more accurately.
04:20 we get another of these sparking sounds, but see nothing.

04:22 YSPY error No 4 Trigger 3 I/P missing ST 28 2
04:33 We have just discussed whether or not we should try for a new filling and decide to hold on until 05:00 when Haidt calls & say their luminosity is low and would like a new filling. We say that we will call the other groups and see what they say. We call PKR first & find out the probability of getting a new fill in a reasonable time: they are optimistic. Then the beams are lost, so a new filling has been decided by an outside agency!
06:05 natural muon crate missing warning (crate 10) - did not go away - reset by hand.
06:06 muon crate missing again required a manual reset. (crate 10)
06:35 muon crate missing - needed to reset crate in hall (crate 10)
06:46 muon crate missing - (crate 10)
07:01 JDAS READOUT ERROR 44 Timeout branch 3 crate 2: muon chambers
07:06 Beams dumped E_O_S.
Polarization machine shift starting, our magnet is run down to 500.
08:04 our magnet is at last down to 500 and so we go to bed!
Day shift: Allison/Lubatzinger keeping watchful eye on JADE.
10.49 Magnet at 1047 A. Computer seems not to be able to control it. Now 1093 A & rising!
10.53 Now at 1083 A, steady. Magnet program says CALL LIMIT EXCEEDED. R. Marshall sought, and found. This happens from time to time

leave at 1080 A and it will just be OK tonight.

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E1>6GeV	T2 Bit 17 2T·E4·2tr.

44 Thursday 17.6.82

16⁰⁰ AWajus / occational detector checks, since machine studies go on until 11pm
23⁰⁰ Magnet → 7100 A on request of PKR
23⁴⁸ Water leak in PETRA, no beams until 3 am at least, (if expert has all spare parts).
Magnet → 1000 A.

18.6.82

0⁰⁰ Feist, Allison
3⁵¹ Run 11561 started. YPARA says 2 LG block pedestals > 500. Stop run & try again
3⁵⁶ " 11562 . . Same YPARA message.
4⁰⁰ ID Trip.
11563 & 11564
Run 11561 and 11562 / Pedest. Crate 1 Channel 78% and 788 > 500

4³¹ Another I.D. Trip.
4⁴³ JDAS READOUT ERROR 44 — TIMEOUT branch 6 crate 4 : I. D. Ring 3 > pi.
4⁴⁵ MUON CRATE MISSING — 10. Reset from CAMAC crate.
4⁵⁶ Run 11563 started. MUON CRATE MISSING — 3. Reset from CAMAC crate. Same YPARA problem.
5¹⁹ I.D. Trip.
5⁴⁹ Run 11564 started. Same YPARA problem (2 LG block pedestals >500)
6¹⁰ MUON CRATE MISSING — 10. Wouldn't reset from CAMAC. Wouldn't reset in hall. Paused run. Then reset in hall. All was OK when run continued.
6¹⁷ Beams lost.
6²⁵ Short Break - Kurze Unterbrechung.
8⁰⁰ Schmidtmann + Heine
8⁰⁵ We had to reset μ-crate 8 at the experiment
8³⁰ No trigger. Rej red lamp on, pushing green button didn't help, but starting new run
9²⁰ μ-Crate 10 missing, cannot reset it!
Ped-histograms! Trigger bit 2 a bit high (FWHM) ⇒ high deadtime (relatively)
9⁴⁰ background goes up (>1μ), chamber switches off
10⁰⁰ μ-Crate 10 fixed.
10⁴⁵ Short break (access for Tasso; broken pump at the LA)
13¹⁵ background goes up, chamber switches off
13²⁰ Trigger bit 4 not yet down (despite the work of experts)
It can not be fixed before new boards arrive.

ON/OFF N50	MIP	TOF	<L> ×10³⁰	SLdt Run	SLdt Exp.	IBM TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

45

18.6.82

13⁴⁰ ID-trip (anode current)
14²⁵ No triggers, "status 3", recipe helped
14⁴⁶ timeout branch 2 crate 5 Leadglass acc. time
15¹⁵ Immediate beam dump since Mark J needs urgently access (they loose water) magnet → 2000 A
15³⁰ It will either take ~30 min (~~provisional~~ ~~manchester~~ repair) or 2 hours (if they need a technician)

16⁰⁰ S. Yamada, A. Wajus
18²² we have stable beams
18³⁰ DLB # 179 exchanged (wires 1432 - 1439)

19⁴⁶ beams lost
20:14 New fillings ready.
20:50 Runs 11573, 11574 taken with new NSO program
21.19 Beams again
21.28 Status 3 trigger hang up / normal cure helps.
Run 11575 with FADC

19/6/1982, Saturday

0:00 Heinzelmann & Odaka
~0:30 New Fill
1:44 Beams lost
2:26 New Fill
2:33 ~ ∘ many JDAS errors
FM
JDAS ERROR 55 false interrupt from LG micro. ①
46 MIPROC 16 out of sequence YY=1
44 branch 2 crate 3 ... 4 times

∘ stop run, then start a test run without IBM link.
JDAS ERROR 44 branch 3 crate 3 ... during pedestal run ②
→ The run is automatically terminated.
∘ JDAS reloading does not help.
∘ After reloading NORD, a test run worked but the run with IBM link ~~does~~ did not work. (Errors ① appeared.)
∘ Then we tried again to start a test run, but it was terminated with the error ②.

3:40 beams lost

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E1>6GeV	T2 Bit 17 2T·E4·2tr.

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Run 11561 and 11562 / Pedest. Crate 1 Channel 782 and 788 > 500

4³¹ Another I.D. Trip.
4⁴³ JDAS READOUT ERROR 44 — TIMEOUT branch 6 crate 4: I. D. Ring 3 > pi.
4⁴⁵ MUON CRATE MISSING — 10. Reset from CAMAC crate.
4⁵⁶ Run 11563 started. MUON CRATE MISSING — 3. Reset from CAMAC crate. Same YPARA problem.
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Ped-histograms: Trigger bit 4 a bit high (FW MA)=0 high dead time (relatively)
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10⁴⁵ short break (access for Tasso; broken pump at the LA)
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13²⁰ Trigger bit 14 not yet down (despite the work of experts/ It can not be fixed before new boards arrive.

ON/OFF N50	MIP	TOF	<L> ×10³⁰	SLdt Run	SLdt Exp.	IBM TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

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19/6/1982, Saturday

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JDAS ERROR	55	false interrupt from LG micro.	
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3:40 beams lost

Run	Date	Start	Stop	at Run Start I_+	at Run Start I_-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	To rej. $\times 10^6$	T_1 Acc. Sum.	T_2 Acc. Sum	T_1 Bit 2 $E_1 > 6$ GeV	T_2 Bit 17 $2T \cdot E_4 \cdot 2tr$.
11573	18.6.82	19.12	19:47	9.3	9.2	9.7	2020	5026	526	51	1758	5031	619	1234
11574	"	20.14	20:48	10.7	10.8	11.1	1916	5211	448	55	1754	5133	628	1301
11575	"	21.~~21~~31	22:14	10.4	10.8	14.1	3194	8002	831	116	2704	7878	1023	1956
11576	"	22:15	23:06	8.72	9.14	8.7	3068	6986	798	69	2586	6959	890	1542
11577	19.6.82	0:46	1:40	10.6	10.7	10.0	3274	8002	851	85	2658	8228	937	1977
11578	"	1:41	1:44	9.3	9.1	8.6	136	353	35	3	117	320	43	69
11579	"	2:32	2:33	10.7	10.8	10.6	43	170	11.2	1.2	53	104	14	~~149~~ 27
11580	"	2:38	2:39	10.6	10.6	9.0	23	110	5.9	0.5	32	48	8	20
11581	"	2:49	2:49	10.0	10.1	0.0	0	42	—	—	11	0	4	4
11582	"	6.27	6.05	—	—	—	—	1696	—	—	—	—	—	—
11583	"	10.43	11.56	9.77	9.62	7.8	4374	7918	1138	88	3592	10113	1299	2136
11584	"	12.35	13.40	10.66	10.81	9.2	3887	8002	1011	93	3366	10083	1191	2384
11585	"	13.41	14.04	8.67	8.80	8.1	1353	2661	351	28	1240	3226	447	3984
11586	"	14.25	14.28	7.64	7.76	6.2	125	199	32	2.0	81	229	25	52
11587	"	14.54	16.04	8.72	8.70	8.8	4191	8002	1091	96	3406	10695	1201	2525
11588	"	16.04	17.23	8.72	8.70	8.0	4685	8002	1220	98	3629	10148	1311	2113
11589	"	17.23	18.01	7.10	7.10	6.4	2313	3666	601	39	1633	4510	594	895
11590	"	18.30	19.39	10.8	10.7	10.2	4081	8002	1062	108	3554	10121	1295	2348
11591	"	19.39	20.44	8.6	8.6	7.5	3830	6517	996	75	2910	8287	1078	1665
11592	"	21.39	21.49	10.64	10.70	8.7	574	1084	149	13	456	1378	161	340
11593	"	23.04	0.14	10.9	10.7	8.8	4120	8002	1072	95	3573	10047	1287	2336
11594														
11595	20/6/82	0.16	1.35	8.8	8.7	8.5	4688	7920	1219	104	3535	9802	1306	1909
11596	"	2.15	3.27	10.6	10.8	10.1	4126	8002	1073	108	3440	10668	1230	2754
11597	"	3.25	3.54	8.5	8.7	7.0	1739	2904	452	32	1344	3492	500	628
11598	"	4.00	4.32	7.7	8.0	6.2	1949	3023	507	32	1398	3583	483	626
11599	"	5.12	5.54	10.74	10.56	9.1	2442	4795	635	57.5	2141	6116	816	1499
11600	"	6.40	7.47	10.8	10.9	9.1	4037	8002	1050	96	3586	10170	1309	2381
11601	"	7.48	9.09	8.6	8.8	6.9	4793	8002	1247	86	3685	9628	1325	1864
11602	"	9.10	10.42	7.0	7.1	5.6	5542	8002	1442	81	3736	9397	1362	1582
11603	"	10.43	11.41	5.6	5.8	5.0	3487	4365	892	44	1962	5347	687	813
11604	"	12.16	13.31	10.7	10.6	8.6	4208	8002	1094	94	3619	10147	1312	2206
11605	"	13.32	14.53	8.5	8.5	6.9	4837	8002	1258	87	3672	9796	1304	1872
11606	"	15.23	15.33	6.5	6.4	5.8	623	881	162	91	400	1041	145	166

N50	ON/OFF MIP	TOF	$\langle L \rangle \times 10^{30}$	$\int L dt$ Run	$\int L dt$ Experim.	IBM/TAPE	BP [V]	T_2 rej. Ev. Fr. (%)	# Bhabha	# MH	E_{beam}	Remarks
ON	ON	ON	8.16	16.48	1594.76 1611.24	IBM	0.70	56	221	4	17.30	beams lost 19:46 ? } N50 test version
ON	ON	ON	8.58	16.43	1627.67	"	"	58	203	6	"	beams lost 20.45 }
ON	ON	ON	7.95	25.39	1653.06	"	0.7	57	341	6	"	with FADC
ON	ON	ON	7.06	21.67	1674.73	"	-	58	267	9	"	beams lost 23:05
"	"	"	7.10	23.26	1697.99	"	0.8	59	312	15	"	
"	"	"	6.89	0.89	1698.88	"	0.7	51	18	0	"	beams lost
"	"	"	8.96	0.39	1699.27	"	0.85	37	6	0	"	
"	"	"	9.13	0.21	1699.48	"		19	4	0	"	short runs
"	"	"	—	—	1699.48	"		—	2	0	"	
—	—	—	—	—	—	—	—	—	—	—	—	LG problem – run no good
"	"	"	7.07	30.94	1730.42	"		59	356	10	"	Beam lost, Hole in LG end caps.
"	"	"	7.59	29.51	1759.93	"	0.7	58	323	13	"	
"	"	"	6.80	9.20	1769.13	"	0.6	58	117	4	"	
"	"	"	5.37	0.67	1769.80	"	0.6	58	9	0	"	
"	"	"	6.88	28.84	1798.64	"		58	330	9	"	
"	"	"	6.20	29.04	1827.68	"		58	350	20	"	with FADC readout
"	"	"	5.38	12.45	1840.13	"	0.55	57	173	9	"	
"	"	"	7.70	31.41	1871.54	"	0.85	58	371	20	"	with FADC
"	"	"	6.34	24.27	1895.81	"	0.65	58	308	8	"	with FADC
"	"	"	7.92	4.54	1900.35	"	0.9	57	45	2	"	with FADC
"	"	"	8.05	33.15	1933.50	"	0.9	58	410	14	17.30	with FADC
												junk
"	"	"	6.17	28.90	1962.40	"		57	360	10	"	
"	"	"	7.39	30.50		"	1.0	59	366	10	"	with FADC
"	"	"	6.37	11.08	2003.98	"		57	167	6	"	
"	"	"	5.81	11.33	2015.31	"		57	121	5	"	
"	"	"	7.36	17.96	2023.27	"	0.9	58	229	11	"	beam lost
"	"	"	7.7	31.07	2054.34	"	0.87	58	396	14	"	
"	"	"	6.41	30.70	2085.04	"	0.62	57	361	10	"	
"	"	"	4.86	26.95	2111.99	"	0.52	56	349	14	"	with FADC
"	"	"	3.78	12.96	2124.95	"	0.47	57	159	5	"	with FADC Beams dumped
"	"	"	7.47	31.45	2156.40	"	0.85	59	412	13	"	with FADC
"	"	"	6.25	30.22	2186.62	"	0.68	57	335	19	"	with FADC
"	"	"	4.58	2.85	2189.47	"		56	34	0	"	with FADC Beams dumped

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E1>6GeV	T2 Bit 17 2T·E4·2tr.

48

19/6/82

5:26 New Fill

6:38 We tried to do LG test run. Then ~~~ following error occured.
YPARA 4 WRONG DATA FORMAT IM LG-BANK PROCESSOR 2 FIRST WORD IS NOT ADDRESS.

8.00 Allison & Naroska

8.50 LG Readout still has problems, don't know how to proceed.
Phoned D. Cords again. $
Checked timing sequence of input pulses, ok.
Readout of LG alone does not halt, equally Tagging. But data format seems to be wrong, lots of pedestals, also addresses wrong sequence.
Find out, address has to be set in processor. Odaka does that.

9.20 Addresses are set properly now. But we get false interrupt from LG microprocessor with first event, problem seems to be LG crate 7.

10.20 Processors of LG crate 5 and 6 are interchanged. 7 has the original processor in. Now things seem to be working. Nobody understands why.

10.40 Run 11583 to IBM started.

11 45 Gap in LG endcap map.

11 56 Beams lost. Note $\mathcal{L}dt$ is very high for run 11583. Also trigger rates high. Must have been a good beam.

Note: FORWARD MUON TRIGGER OFF SINCE RUN 11583. It is too fast (~ 4 Hz). Telephoned A. Ball. At the moment nothing can be done about it, because some electronics boards are still 'missing'. 5 fast pulse boards have developed faults since 13/6/82, resulting in a spares shortage. New boards are on their way from Manchester by express air-freight.

12 34 Run 11584 started. Gap in LG endcap fixed.

14 23 JDAS errors by the dozen – LG to blame. Run 11584 ended. JDAS reloaded.
Power off and waggle LG micro in crate 7. Reload JDAS again, and it worked.

14 25 Run 11586 started – but beams lost 3 mins later!

14 53 Run 11587 "

16 00 H McCann + A Wagner

→ until further notice all runs should be started with "F8" (detailed instruction near Control-Terminal) in order to read also FADC's. Since a recent improvement by D. Cords the FADC bank is only written, if a track was found by track finding logic in Ring 2, Segment 6. So the average event length does not increase too much.

ON/OFF N50	MIP	TOF	<L> ×10³⁰	$\mathcal{L}dt$ Run	$\mathcal{L}dt$ Exp.	IBM/TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

49

19.6.82

18 00 beams dumped for new filling
18 30 start run 11590
18 36 "Status 3" – trigger hang up, cured according to prescription.
at restart: JDAS readout error 44, timeout branch 2 crate 5.

20 00 Beams spontaneously lost.
21 49 Nocturnal
22 10 SHORT BREAK, transmitter problems.
23 04 Beams back

If we had a compulsory sign in book every time someone enters the counting room, we could very quickly find out who does it. (Although the culprit is known to some)

Sunday 20/6/82 0 00 Glowinning + Dittmann

0.33 Trigger box hang-up ("green LED steadily on" & "Status 3")

2.00 Fast pattern recognition and MUPAIR selection implemented in standard NSODAR (from run 11598 on)

5.00 Found chamber veto signal unplugged from trigger box (as usual; why do we have this cable?)

5 53 Beams lost but ID didn't trip!

08.10 Nozaki & Kanzaki

8 47 YSPY Error: Trigger 3 I/P missing. ST 21 GP 2 Trigger 3 is not active anyhow.
→ Disappeared ~10 min. later. So we left it.

10 30 PKR have a problem in Synchrotron. So they can't refill the beams.

11 43 Beams dumped.

12 10 New filling ready.

13 05 ID-trip.

16 00 H. McCann + H. Krehbiel

16 20 New fill ready.

This was on purpose to wait for arrival of the fast pulse cards. It is easy to resume operation of T3. Now please call Herbinhaus!

During run 11607 I noticed that T3 recept was (correctly) pulled out, but the corresponding T1 and T2 ~~~ BN. positions were in, leading ~~~ nowhere. I switched off T1 intense and pulled out the T2-cable. HK.

To the NORD Experts: Edit History – Mac Y Cut does not work. Any attempts (F something) lead to:
1) short blink of script "USE the Horizontal Cursor 2) a short beep. 3) Redrawing the original listing.

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50 RUN	DATE	START	STOP	at Run Start I_+	at Run Start I_-	D.T. (%)	TIME (sec)	Records out	All $\times 10^6$	To rej $\times 10^6$	T_1 Acc. Sum	T_2 Acc. Sum.	T_1 Bit 2 $E_1 > 6$GeV	T_2 Bit 17 $2T \cdot E_4 \cdot 2tr$
11607	20.6.82	16.26	17.39	10.60	10.74	8.8	4256	8002	1107	97	3571	10273	1310	2306
11608	"	17.42	19.07	8.29	8.49	7.2	4961	8002	1289	92,8	3701	9870	1402	1836
11609	"	19.11	20:23	6.57	6.77	5.4	4147	5719	1078	58.4	2675	6884	1018	1108
11610	"	20:48	22.10	5.30	5.48	3.6	4617	4777 finally!	1200	43.0	2424	5203	833	725
11611	"	22.55	23.44	11.00	10.60	8.0	2805	4951	729,9	58,2	2770	6440	790	1372
11612	21.6.82	0.32	1.44	11.07	10.92	10.5	4068	8002	1057	111	3435	10678	1261	2532
11613	"	1.45	2.00	8.75	8.82	7.8	932	1666	242	19	738	2101	262	439
11614	dummy													
11615	"	2.45	3.53	10.92	10.88	9.2	4091	8002	1064	98	3456	10518	1283	2431
11616	"	3.54	4.11	8.61	8.75	8.4	921	1779	240	20	782	2149	277	2568
11617	"	5.37	5.39	10.93	10.75	26.0	108	244	28	7	100	244	35	67
11618	"	10.51	11.34	10.9	10.5	9.9	2452	4906	638	63	2199	6101	801	1585
11619	"	13.43	14.54	11.0	10.6	8.7	4178	8002	1087	95	3527	10183	1276	2451
11620	"	14.54		8.9	8.6	7.3	4682	8002	1218	89	3657	9762	1258	1995
11621	ONLY PEDESTALS			READ – (RUN	INCORRECTLY	STARTED)	–	THEN	WE	STOPPED.				
11622	"	16 15	16 32	7 of	6.98	6.2	998	1432	2470	15.4	638	1787	240	331
11623	"	17 44	18 40	10.56	10.29			~7000	~	run	summary	lost	~	
11624	"	1846	1849	8.68	8.49	8.8	186	386	48	4.2	156	482	64	118
11625	RUN	LOST		–	NO	EVENTS	TAKEN							
11626	"	19 34	19 47	10.93	10.55	11.0	722	1522	188	206	652	2014	230	537
11627	"	20 22	21 26	10.84	10.50	10.5	3823	8002	995	104	3417	10952	1219	2713
11628	"	20 27	22 45	8.66	8.43	7.5	4653	8002	1211	91	3583	10230	1290	2087
11629	"	22 46	23 82	7.03	6.84	6.2	2779	4132	723	44.5	1801	5343	649	956
11630	22/6/82	0.00	1.14	10.93	10.55	10.6	4023	8585	1047	110,7	3672	11941	1350	2960
11631	"	1.15	1.21	8.72	8.48	8.3	291	623	76	6.3	287	687	111	166
11632	22/6/82	1.59	3.01	11.0	10.62	10.4	3735	8002	972	101	3299	10986 2833	1231	2833
11633	"	3.03	5:00	8.83	8.56	7.5	6792	11530	1,77 10^6	0,13 10^6	1,63 10^6	15332	1760	3107
11634	22/6/82	6.13	7:24	11.02	10.87	9.8	4232	8644	1101	108	594	11739	1305	2853
11635	"	7:5	8:39	8.66	8.60	8.1	4431	8002	1153	91	3511	10455	1292	2158
11636	"	8:41	9:26	6.93	6.94	6.5	2667	4026	694	45	1830	5126	646	951
11637	"	10:38	11:51	11.19	10.77	10.3	4012	8258	1044	107.5	3449	11340	1247	2768
11638	"	11:53	12:54	8.78	8.47	8.4	3207	6080	834	70	2585	8019	915	1771
11639	"	13:25	13:58	11.06	10.89	10.5	1979	4139	595	54	1633	5942	529	1595

ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp.	IBM/TAPE	BP [V]	T_2 Rej. Ev Fr (%)	Bhabha	MH	Ebeam	Remarks
ON	ON	ON	7.55	32.13	2221.60	IBM	0.85	59	368	12	17.300	Sometimes high deadtime because of IBM JAM. WITH FADC
ON	ON	ON	6.74	30.45	2252,05	"	0.65	59	405	10	17.300	" " YES, WITH FADC Hrs°C 22/6.
"	"	"	4.66	19.33	2271.38	"	0.5	57	229	11	"	" " "
"	"	"	3.42	15.77	2287.15	"	0.4	57	192	9	"	Beam not dumped after all; can't refill ID off unknown time at end of run
ON	ON	ON	7.26	20.36	2307,57	IBM	0.80	62	245	8	17.300	WITH FADC with FADC ? YES
"	"	"	7.27	29.58	2337.09	"	0.9	59	383	12	"	WITH FADC
"	"	"	6.66	6.21	2343.30	"	0.8	58	67	3	"	beams lost WITH FADC
							0.85					WITH FADC
"	"	"	7.41	30.31	2373.61	"	0.85	58	363	14	"	"
"	"	"	6.99	6.44	2380.05	"	0.70	56	75	2	"	beams lost "
"	"	"	5.93	0.64	2380.69	"	0.85	49	16	2	"	beams lost "
"	"	"	8.19	20.08	2400.77	"	0.80	58	274	16	"	with FADC beams lost
"	"	"	8,09	33.82	2434.59	"	0.85	58	379	15	17.30	with FADC
"	"	"	6.87	32.14	2466.73	"		57	400	16	17.30	with FADC
						"						——— Junk.
"	"	"	5.44	5.16	2471.89	"	0.99	58	60	3	17.30	WITH FADC – BEAMS DUMPED
"	"	"		x 25	2496.89	"	0.92				17.3	NEW FILL. WITH FADC. MORD hang up
"	"	"	7.72	1.44	2498.33	"	0.8	56	23	1	"	beams lost
"	"	"				"	0.95				17.3	WITH FADC. NO EVENTS
"	"	"	7.74	5.59	2505.92	"	0.95	59	61	5	17.3	WITH FADC BEAMS LOST
"	"	"	7.90	30.21	2536.13	"	0.83	60	379	20	17.3	WITH FADC.
"	"	"	6.58	30.62	2566.75	"	0.68	58	371	13	17.3	WITH FADC.
"	"	"	5.25	14.58	2581.33	"	0.54	58	199	7	17.3	WITH FADC. BEAMS DUMPED.
ON	ON	ON	8.20	33.00	2614.33	IBM	0.98	60	377	19	17,3	with FADC
"	"	"	7.45	2.17	2616.60	"		54	32	0	"	" beams lost
ON	ON	ON	7.98	29.79	2646.39	IBM	0.97	59	360	12	17.3	"
"	"	"	5,88	39.97	2686.36	"	0.71	59	467	18	"	" " beam dumped
ON	ON	ON	7.87	33.1	2719,67	IBM	0.95	59	376	14	17,3	"
"	"	"	6,69	29,65	2749,32	IBM	0.70	59	405	8	"	"
"	"	"	5.50	14.68	2764.00	"	0.52	59	164	5	"	" Beams dumped
"	"	"	7.86	31.55	2795.55	"	0.94	59	377	12	17,3	" N.B. >8002 RECORDS OUT
"	"	"	6.47	21.72	2817,27	"	0.75	58	259	7	"	" beams lost
"	"	"	7.26	14.38	2831,65	"	0.91	60	138	7	17,3	" beams lost

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E₁>6GeV	T2 Bit 17 2T·E₄·2tr.

ON/OFF N50	MIP	TOF	<L> ×10³⁰	SLdt Run	SLdt Exp.	IBM TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

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18.15 20.6.82

~~77+10~~ IBM got completely stuck. No transfer errors, but fully hung, and "No events for x seconds."
Calling IBM and pairing - restarting (F2) several times & seemed to help.

19.40 Since Lumi ≈ Refill Lumi, I suggested a new fill at 20.00. Pluto wanted 20.15. The others agreed grudgingly.

20.12. Peter says they can't fill. LINAC I problems. We go on with that fill.

21⁰⁰ During run 11610, Herr Krehbiel says that, due to his working on the trigger ~~this~~ ~~that~~ during the run, "there may be inconsistencies between scalers and data".

Run 11610. 10 was off without alarm sound. Run did not stop because cable was off.
For an unknown part of the run, the 10 was off. Beware of events!

After Run 11610 I did not start another run, but tried to find the cause of Trigger hang-ups.
Ten minutes later the beams got lost, 10 trip.
Exchanged left analog summing card in T2 trigger logics, it gave after-pulses.

22.50 New fill ready
23.10 Single Error Message "Magnet fluctuation"
23.40 Beams lost

Cause of the hang-ups localized. The signal "T2 accept, i.e. the logical condition goes from false to true at any time, not only during the gate times. There must be something wrong with the hit-gate of T2, but where?

21.6.82 0⁰⁰–8⁰⁰ Ball + Peters

0³⁰ new filling Run 11612
00:50 Run paused for ~2mins + I.D. run down because of high background.
2:42 new fill Run 11615
4:10 beam lost again end of run 11616.
5:37 new fill Run 11617.
5:39 beam lost! problems with Pia!

computer problems with Pia!

21.6.82 8⁰⁰–16⁰⁰ Ph. Rowe & A. Wagner

8⁵⁰ Still no "prognosis" on duration of PIA computer problem.
magnet → 2000 A
9⁴⁰ magnet → 7500 A, PKR wash to inject.
10⁵¹ beams back
11³⁴ during beam optimisation beam got lost.

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21.6.82

13⁴³ beams back

16⁰⁰ WARMING & HEDGECOCK.

18⁴⁰– Nord Hang Up at Level 14, "Paging" Lamp ON, "Protect ~~Ring~~ Ring 3" Lamp ON
it happened, when Glendinning copied program files to the printer at the same time when the event display was busy drawing an event on the screen

18⁴⁹ beams lost

20²⁰ One (23) BP current monitor cables disconnected. – Replaced after ≈ 5000 events beams OK.

0.00 22/6/82 Bethke / Pearce

New filling ready just as we arrive.
0.07 start run 11630
1.21 Beams lost at begining of run 11631.
1.59 New fill ready. Start run 11632
5.00 Beams dumped for new filling
6.00 New filling ready. Start run 11634

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800 22.6.82 McCann / Schmidtmann

11⁰⁵ JETCH HIGH CURRENT, FAULTY PART 96 + I.D. Trip.
11¹⁸ 1x JDAS error 44 B3 C2 μchams

~~B3~~ 11³⁰ Matsumura asks us to keep an eye on noisy ring 1 wires – they are generally worse at start of fill, presumably due to beam conditions.

12⁵⁷ beams lost
13²⁰ new fill ready. Start run 11639
13⁵² Jetch high current
13⁵⁵ beams lost, break, HF-problems

16⁰⁰ Ball / Heintzelmann
16¹⁰ "No trigger" – status ? –

NOTE: T3 STATUS: replacement FP8's (see P48) are being held by customs after documentation mix-up by freight company! Smuggling does pay! Expect them to be cleared tomorrow a.m., ~~after~~ after which the T3 (FWHM) trigger can be rapidly fixed. AB.

[especially Beate!]

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E1>6GeV	T2 Bit 17 2T·E4·2TR
11640	22/6/82	15:00	16:03	11.37	10.87	~~5.11~~	3757	8002	978	.64	3300	10922	1182	2823
11641	"	16:04	17:18	9.03	8.64	9.0	4435	8002	1154	104	3495	10453	1219	2255
11642	"	17:19	18:33	7.35	7.04	6.8%	4370	6814	1137	778	2882	9050	975	1727
11643	"	19:05	20:09	10.81 ~~8.81~~	10.49	10.1 ~~5.3~~	3805	8002	990	99.9	3409	10663	1240	2617
11644	22/6/82	20:58	21:29	10.87	10.98	10.3	1855	3898	483	49.9	1648	5301	587	1381
11645	"	22:29	22:39	10.96	11.03	5.8	558	1220	145	15.2	511	1609	194	424
11646	23/6/82	0:06	0:12	10.96	10.95	14.4		914	~	run	summary	lost	~	
11647	"	0:24	1:28	10.25	10.28	10.0	3874	8002	1006	100	~~3428~~	10927	1234	2551
11648	"	1:29	2:42	8.35	8.37	8.6	4305	8002	1118	95	1022	11156	1207	~~2468~~
11649	"	2:42	3:18	6.91	6.96	7.8	2093	3598	541	42	499	5032	501	1030
11650	"	3:48	~~4:53~~	10.86	10.71	9.9	3839	8002	998	99	3445	10508	1271	2540
11651	"	4:54	6:10	8.80	8.71	7.5	4565	8002	1186	89	3463	10144	1242	2062
11652	"	6:11	6:32	6.82	6.77	6.4	1300	2075	338	22	985	2460	352	472
11653	"	7:21	8:33	10.90	10.99	9.9	4045	~~8002~~	~~1053~~	103	3309	11289	1228	2789
11654	"	8:34	8:43	8.71	8.54	10.6	535	1056	139	14.8	425	1412	164	309
11655	"	13:23	13:26	10.70	10.69	9.7	54	168						
11656	"	13:27	14:36	10.53	10.54	13.9	14464	8002	1021	141	3227	11174	1171	2990
11657	"	14:36	14:52	8.26	8.34	10.8	881	2115	229	247	722	2702	277	736
11664	"	15:31	15:31					32						
11665	"	15:31	15:35	7.15	7.24	9.1	183	433	47.8	4.3	160	487	63	136
11667	"	15:55	15:55	6.71	6.81	13.3	30	96	76	10.1	17	57	9	76
11668, 69		Sunday ?	—	NO	DATA	WRITTEN	OUT ??	→ 11668 DATA	WAS	WRITTEN	TO	IBM.	THERE	IS NO RUN SUMMARY*
11670	"	21:57	22:55	11.05	11.07	11.7	3073	8297	800	94	2795	8781	1020	2206
11671	"	22:56	23:29	9.15	9.18	9.7	1935	4494	503	49	1433	4759	580	997
11672	"	23:35	00:33	8.19	8.23	11.5	3462	8002	901	104	2514	9724	951	2728
11673	24/6/82	00:34	01:18	7.02	7.10	9.6	2636	5775	685	65.7	1818	6751	712	1644
11674	"	02:09	03:03	10.98	10.87	11.8	3234	8002	841	99.2	2735	9517	1099	2392
11675	"	03:04	04:05	9.16	9.08	9.5	3643	8002	948	89.7	2817	9546	1119	2134
11676	"	04:06	05:13	7.75	7.70	8.5	4031	8002	1048	88.6	2880	9665	1145	2126
11677	"	05:14	05:56	6.54	~~6.54~~ 5.74	7.2	2463	4458	640	458	1673	5273	657	1118
11678	~~no~~	data	due	to	IBM	failure								
~~11679~~ 11679	"	06:08	07:35	5.78	5.80	6.1	5167	8002	1344	81.3	3047	9769	1123	1751
11680	"	7:37	9:12	4.8	4.8	5.6	5682	8002	1479	82.8	2962	9997	1065	1635

ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	∫Ldt Run	∫Ldt Exp.	IBM/TAPE	BP (V)	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks
u	u	u	7.6	28.55	2860,20	IBM	0,86	59	361	6	17,3	with FADC
ON	ON	ON	6.65	29.48	2889.68	"	0,7	58	352	13	"	"
"	"	"	5.32	23.24	2912.92	"	0.6	58	257	5	"	" beams dumped
"	"	"	7.57	28.81	2941.73	"	0.9	59	364	11	"	with FADC beams lost
"	"	"	7.37	13.67	2955.40	"	0.9	60	171	5	"	with FADC beams lost
"	"	"	7.86	4.39	2959.79	"	0.9	58	56	3	"	with FADC beams lost.
"	"	"	8.53	2.81	2962.60	IBM	1.3	62			"	Nord key up / with FADC
ON	ON	ON	8.06	31.22	2993.82	"	0.9	60	388	18	17.3	with FADC
"	"	"	6.37	27.41	3021.23	"	0.8	59	331	8	"	"
"	"	"	5.33	11.10	3032.30	"	0.7	59	129	7	"	" / beams dumped
"	"	"	8.15	31.30	3063.60	"	1.2	58	372	12	17.3	with FADC
"	"	"	6.79	31.00	3094.60	"	0.7	57	370	10	"	"
"	"	"	5.48	7.12	3101.72	"	0.56	58	92	2	"	" / beams dumped
"	"	"	7.02	28.41	3130.13	"	0.85	60	292	11	"	with FADC
"	"	"	6.50	3.48	3133.61	"	0.77	58	40	2	"	beams lost
			9.31	0.50	3134.11	"	0.85		8	1	"	
"	"	"	7.29	28.58	3162.69	"	0.85	59	345	8	"	Not sure if FADC was ON or OFF !
—	—	—	6.60	5.82	3168.51	—	0.74	60	75	1	"	
												Camac problems
"	"	"	6.02	1.10	3169.60	"	0.55	57	18	0	"	" " Good Run.
"	"	—	4.36	0.13	3169.73	"	0.55	2	3	0		Good Run
"	"	"	5.45	3.38	3173.11	"	~~0.87~~		46	3	"	* ON NORD FOR 11669. 11668 DATA ENTERED.
"	"	"	8.36	25.70	3198.81	"	0.84	60	288	8	"	WITH FADC
"	"	"	7.40	14.31	3213.12	"	0.82	61	144	2	"	WITH FADC run stopped for LG repair.
"	"	"	6.24	21.62	3234.74	"	0.80	60	242	7	"	WITH FADC
"	"	"	5.26	13.87	3248.61	"	0.7	59	179	1	"	WITH FADC beams dumped
"	"	"	7.73	24.99	3273.60	"	11	61	334	8	"	WITH FADC
"	"	"	6.79	24.72	3298.32	"	0.8	60	298	11	"	"
"	"	"	5.82	23.48	3321.80	"	0.7	59	325	9	"	"
"	"	"	4.78	11.78	3333.58	"	0.6	58	157	2	"	without FADC by mistake
"	"	"	3.84	19.82	3353.40	"	0.5	59	250	5	"	WITHOUT ~~FADC~~.
"	"	"	2.78	15.80	3369.20	"	0.5	59	196	7	"	with FADC

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E>7.6GeV	T2 Bit 17 2T·E>2tr.
56	22/6/82													
	18:00	Request new filling for 18:15.												
	18:14	Synchrotron vacuum problem. Retain this fill. PKR estimate ≥ 1/2 hour to cure.												
	18:30	Problem fixed. Dump beams. End of run 11642.												
	19:02	New fill ready. Start run 11643												
	20:09	Beams lost, end run 11643.												
	20:57	New fill ready. Start run 11644.												
	21:29	Beams lost end run 11644. 'unterbrechung' H.F. problems are causing beam loss. PKR investigating.												
	22:29	New fill ready. Start run 11645												
	22:36	Beam lost. ID trip. End run 11645.												
	23 June 82													
	0⁰⁰	Bethke & Warming on shift												
	0⁰³	new fill ready												
	0¹²	MORO hang up: level 14, Protection Ring 3, Paging, no graphics, no plotter, no other task, "184 busy" we restart Nord, in the first go the colour TV remains black, we try again, successfully this time												
	08:00	Bartl & Glendinning												
	08:45	ID trip due to beam loss due to power fluctuation												
	09:15	transmitter failure in the section North, faulty part = 10kV power line												
		turn down magnet												
	10:34	PETRA TV screen goes Blank!												
	10:41	" " " back again.												
	10:50	Injection started, magnet set to full field												
	12:00	Injection problems, turn down magnet												
	12:40	faulty fast pulse boards in µ-crates 10&14 was replaced. T3 (FWHM) trigger ready for reconnection												NB.
	13:17	test run to check FWD µ-trigger rate												
		FWD µ-trigger rate is the highest rate, Kruse switch it off again												
		start normal run.												
		slow id. Trip												
	14:04	trigger hang ups with various error in the question pulse sequencer												
	14:03	T3 shall not be very high rate in T3 output in the last few times of the T3 Output histograms of run 11656 A Ball should have a look at it.												
		A Ball says: i. ignore YSPY-message for missing T3												
		ii. high rates in last bins of these chambers are permanently disabled. They do not give T3 signals. The appropriate strip groups are permanently enabled.												
	14:40	Std. histograms for run 11656 ok												

Run	Date	Start	Stop	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	∫Ldt Run	∫Ldt Exp.	IBM/TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks
	23.6.82															57
	14:45	HV for FWD µ counters set to nominal voltage, they were wrong up to 13V														
	15:00	Not possible to read out Tagging ADC's. Here problems started with a lead glass error														
		call Rimkus + Uhrdt														
		Beate highfound error on lg Mipsee in crate 7 bl. 2 – did not cure the problem														
		waiting for experts.														
	15:30	Wachtel-Kontakt in tagging crate?? pull mipsee out, put in again works again.														
		Runs 11658–11663 have no events														
	15:33	Same hang up again time out br 2 crate 3														
	16:00	Calendruning Standing in for McCann + Steffen.														
	17 15	LG ADC Crate power failure – power pack changed. (M. Minowa)														
	17:15	McCann taken over.														
		After LG ADC Crate Power repeat continuous problems with T1-bank (too long). Beate is working on it but we are waiting for backlash.														
	18:45	By some ridiculous reason the T1-bank error seems to have disappeared. But there is no more beam to test. Without beam everything seems to run fine. Now Beate is leaving. I wonder, how I might overcome the next 5 hours until the end of the shift.														
	19⁰⁰	problems with Synchrotron and filling of PETRA														
	21⁵⁶	start run 11670 everything seems to work (ridiculous).														
	22⁰⁰	ID Trip – no alarm, no signals in Alarm registers in rucksack. HV switched on again; continue data-taking.														
	22³⁰	In standard histograms, LG endcap blocks ~~60~~, 69, 70, 71, 72 give no counts.														
		– Kobayashi was called.														
	23⁴⁰	Kobayashi pronounces problem solved.														
		– Wiring of lead glass ADC's is very temperamental; modifications are best left to experts.														
	24/6/82															
	00:00	Ball & Felst. Run 11672 in progress.														
	00:55	New fill requested for 01:15.														
	01:15	Dump beams. End run 11673														

Run	Date	Start	Stop	at Run Start I_+	at Run Start I_-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	To rej. $\times 10^6$	T_1 Acc. Sum.	T_2 Acc. Sum	T_1 Bit 2 E_1 7.66 GeV	T_2 Bit 17 2T·E₄·2tr.

ON/OFF N50	MIP	TOF	<L> $\times 10^{30}$	SLdt Run	SLdt Exp.	IBM /TAPE	BP [V]	T_2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

58 24.6.82

T3 (FWHU) trigger problems. From a sample of 50 events examined on evt. display: (all accepted by the FWHU trigger)

1 genuine FWHU pair
19 from struct 35
15 Halo muons
3 cosmic ?
12 junk in structs 21→34, 3

struct 35 has groups ~~2 2 4~~ permanently enabled to account for dead chambers (all resistor failures) in layers ~~2 2 4~~ of tx,12 endwall. However, there is only 1 dead chamber in layer 4. Since we only require a subtrigger 3 signal from any endwall struct to satisfy the trigger, each genuine μ-pair has 2 chances to fire a struct. The result of removing the permanent enable on ST 35 group 4 is, I reckon, a 0.3% probability of losing a genuine FWHU — quite negligible. Do this from start of run 11674

02:09 New fill ready. Start run 11674.
03:04 Start run 11675.
04:06 " " 11676
05:14 " " 11677 Unable to refill. No positrons until klystron exchanged. Keep this fill.
06:08 IBM failure — reloading. Run 11678 dummy. Run ~~11678~~ 11679
07:37 Run 11680 started with online disk 98% full — dump job delayed by IBM problem.

8:00 Wissner + Schmicthuesen on shift
9:30 PKR informs us that klystron fix takes at least 1h more. We agree to give PLUTO access at 10^00 for 30 min.
10:30 Problems with Synchrotron also. Restart ~15h
Magnet → 1000 A
15^00 Still no beams, but close to restart.
The next shift until 23h will be a machine shift for optimisation of PETRA.
16^00 Magnet → 7500 A, machine shifts
→ Call Mr. Lassen (K) after 23^00 (Because Magnet not reversible below 1000 A; it also seems to be unstable).

16^00 Schiemann + Bethke on shift
22 15 LG ADC chip ~~was~~ is replaced. Pedestals (ch 782, 788) are OK now.
Mirowa. Odaka.
7? 45 Magnet run down to 1200 A after request of PKR.
23^24 Run Magnet up to 7500 A after request of PKR

The verticality of the beam should be only activated if the current exceeds 1000 amps. The vert. current is now also printed in the evt. display. E.E. 24.6.82

Obviously the magnet-program does not stop and wait at 5000 A !!
You have to stop yourself at 5000 !! Normally it stops at ~5400 A
U. Barth

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25/6/82 00.00 KREHBIEL & HEDBERG ON

00^10 NEW FILL APPEARS TO BE READY — CLEAR DECKS FOR ACTION.
00^31 ID SOFT TRIP - NO ALARM. RUN PAUSE — CONTINUE. AFTER RESET. (HV INPUT/OUTPUT CURRENTS TRIPPED & OFF AT SWITCH ON)
01^00 I9 TRIP. ANODE CURRENT. RESET.
02^12 BEAMS LOST FAN EVERYTHING DOWN
03^10 NEW FILL READY BUT MAGNET TRIPPED OFF (DIODE FUSES BLOWN) "K" GROUP CALLED.

During the shift the visual scale panel above the Trigger Box stopped working. Investigation revealed a dead IC, which was in a socket, and could easily replaced; one of the very rare events when an ~~old~~ I.C. of old, proven type failed after 1000's of hours of correct functioning.

4.15 ~~Magnet~~ Magnet back again. 10 fuses had blown. Why ?
4.19 Try to start a run. At first the IBM was busy ("Computer up, Waiting for ---, IBM Busy" on color TV.)
We tried to start IBM by the commands F10, F8. It seemed to work, but when we started the run, there was a firework of error messages and the microproc's were all off! We had not turned them off and not reload the stored. (They were "on" the previous run.). Turning them on with F19 - F09 really turned them on and made the error messages disappear.
6.17 Beams quietly lost.

8.00 C. Pearce + P. Steffen on shift.
Inherit run 11691 and a problem with the Petra constants — beam energy and currents are not being received.
PKR ~~[redacted]~~ claims that no fault can be found and that all ~~contacts~~ parameters can be read at the IBM correctly.
We telephoned Herr Cords who will try to solve the problem. It appears that somebody at some time switched off parameter reading by SDAS!!
10.11 Beams lost.
12.05 New filling now ready. Start run 11694. Reset μ crates 4c and 5
Our background level is still the same despite PKR optimisation. B.P. current = 0.93 at start of filling.
12.21 Trigger Box hung up - the usual! - "Serious error in Quertiom Pulse Sequence".

FWHU is now the largest trigger source. See top of P.58.

13.02 Start run 11695. Reset μ crate 1c.
13.17 Trigger hung up. Start new run, everything seems to be OK again.
13.24 beam lost. Beate starts a forward cosmic run (11697).
15.05 PKR attempting to inject again. Beate reinstalled standard trigger.
15.30 Magnet tripped. Called K group
15.32 New filling ready.
15.35 PKR lose 1/3 of beams but continue with luminosity run. We still have the magnet down.
15.53 Beams lost. JADE magnet still down.
16^00 No beam, No magnet. We don't give anything away!

Run	Date	Start	Stop	at Run Start I_+	at Run Start I_-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	To rej. $\times 10^6$	T_1 Acc. Sum.	T_2 Acc. Sum	T_1 Bit 2 $E_1 > 6$ GeV	T_2 Bit 17 $2T \cdot E_4 \cdot 2tr$.	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp.	IBM/TAPE	BP [V]	T_2 Rej. Ev. Fract (%)	Bhabha	Bhabha MH	Ebeam	ON/OFF FADC	Remarks
60																											61
11681	24.6.82	9.12	10.01	3.99	4.01	5.7	2728	3911	710	41	1358	4869	506	757	ON	ON	ON	2.04	5.56	3369.20 3374.76	IBM	.5	59	66	2	17.300	ON	
11684	25.6.82	00^{19}	00^{25}	10.95	10.13	184	255	693	66	12	233	654	102	167	ON	OFF	OFF	6.88	1.76	3376.52	-"-	0.85	45	25	0	"	ON	NEW FILL
11685	-"-	00^{27}	01^{31}	10.18	10.40	10.8	3363	8002	875	94.7	2985	8640	1100	2105	ON	ON	ON	7.62	25.62	3402.14	-"-	0.78	58	352	9	"	ON	
11686	-"-	01^{32}	02^{12}	8.62	8.38	8.7	2378	5125	619	54	1940	5587	715	1269	ON	ON	ON	7.18	17.07	3419.27	"	0.76	58	220	6	"	"	BEAMS LOST
11689	-"-	04^{20}	05^{22}	8.67	8.93	8.9	3689	8002	960	86	2973	8723	1037	1907	ON	ON	ON	7.35	29.12	3446.33	"	0.77	59	311	14	"	"	
11690	-"-	05^{22}	06.14	7.27	7.51	7.6	3034	5720	788	60	2240	6393	813	1330	"	"	"	5.97	18.12	3464.45	"	0.65	59	225	6	"	"	Beams Lost.
11691	-"-	07^{28}	8.20	10.32	10.41	11.7	3054	8002	795	93	2684	8655	1053	2136	"	"	"	7.11	21.72	3536.17	"	0.89	60%	317	8	"	"	NEW FILLING.
11692	25/6/82	8.21	9.25	8.78	8.86	8.8	3799	8006	989	86	2975	8725	1097	1852	"	"	"	6.41	24.36	3600.53	IBM	0.80	59%	280	15	"	"	
11693	"	9.25	10.11	7.37	7.46	7.9	2704	5189	703	55	1902	5952	710	1213	"	"	"	5.62	15.20	3615.73	IBM	0.60	59	180	5	"	"	Beams lost
11694	25/6/82	12.05	13.01	10.54	10.76	13.5	3323	8002	865	117	2673	8769	993	2198	ON	ON	ON	7.15	23.77	3639.50	IBM	0.93	59	298	6	17.300	ON	
11695	"	13.02	13.18	8.84	9.07	21.0	944	2063	245	51	732	2199	264	539	"	"	"	6.31	5.94	3645.44	IBM	0.78	59	71	2	"	"	Beams lost.
11696	"	13.19	13.25	8.41	8.64	9.7	351	886	92	9	310	885	50	1211	"	"	"	6.71	2.35	3647.79	"		56	27	0	"	"	
11697	Cosmic run FORWARD																											COSMIX + 10E FW
11698	25.6.82	16:36	~~10:55~~	~~10.95~~ 10.67	10.64	9.8	3672	8113	955	93	3121	8979	1176	2191 2156	ON	ON	ON	8.10	29.75	3677.54	IBM	0.78	58	365	14	17.300	ON	
11699	25.6.82	17:40	18:53	7.07	7.23	8.0	4177	8002	1087	87	3239	9120	1198	~~1088~~	ON	ON	ON	6.96	29.06	3706.60	IBM	0.63	62	346	13	"	"	
11700	"	18.55	18.56					forgot it	only		181	Events			"	"	"		0.38	3706.98	"	0.53				"	"	Beams lost
11701	"	20:03	21:03	11.10	10.83	10.2	3568	8002	928	94	3008	8990	1120	2239	"	"	"	8.01	28.59	3735.57	"	0.87	59	360	10	"	"	
11702	"	21.05	22.07	9.09	8.96	12.5	3730	7669	971	121	2970	9227	1138	2537	"	"	"	6.65	24.80	3760.37	"		59	324	19	"	"	
11703	"	23:52	0:50	11.06	11.05	11.3	3126	8002	814	92.1	2917	8596	1075	2209	ON	ON	ON	8.90	27.82	3788.19	IBM	0.89	58	311	14	17.300	//	
11704	26.6.82	0:50	1:51	9.03	9.11	9.2	3616	8002	940	86.7	3186	8878	1188	2060	"	"	"	7.74	27.97	3816.16	"	0.8	58	347	14	"	//	no FADC
11705	"	1:51	2:33	7.43	7.58	11.6	2456	4388	639	74.3	1860	4844	683	1046	"	"	"	6.45	15.85	3832.01	"	0.63	58	215	8	"	//	beams dumped no FADC
11706	"	3:04	~~3:53~~ 3:23	~~10.23~~ 10.50	10.2	3225	8002	839	85.7	3012	8500	1177	2183	"	"	"	8.78	28.32	3860.33	"	0.83	58	353	8	"	//	no FADC
11707	"	4:00	5:03	9.14	8.58	8.5	3812	8002	992	84.0	3245	8706	1180	1857	"	"	"	7.36	28.06	3888.39	"	0.70	58	358	9	"	on	with FADC
11708	"	5:04	6:04	7.49	7.06	9.1	3528	6062	918	83.8	2520	6669	958	1294	"	"	"	5.90	20.83	3909.22	"	0.65	57	255	11	"	on	beams dumped
11709	"	6:39	7:23	10.80	10.83	9.4	2464	5430	641	60.0	2034	5923	779	1406	"	"	"	7.27	17.90	3927.12	"	.85	58	226	6	"	"	beams dumped
11710	26.6.82	8:25	9:18	11.70	11.05	11.3	3159	8002	822	92.7	2659	8903	941	2144	ON	ON	ON	7.60	24.64	3951.76	IBM	0.90	60	280	12	"	ON	
11711	"	9:18	10:17	9.14	9.23	9.9	3418	8002	909	89.7	2775	9244	1085	2277	ON	ON	ON	6.75	23.59	3975.35	"	0.79	60	319	7	"	OFF	
11712	"	10:18	10:52	7.71	7.83	9.9	1863	4054	484	48.0	1425	4558	579	1105	ON	ON	ON	5.94	11.07	3986.42	"	0.77	59	135	5	"	ON	beams lost
11713	26.6.82	11:33	12:28	10.90	10.76	11.3	3233	8002	842	94.7	2873	9102	1113	2055	ON	ON	ON	7.45	24.09	4010.51	"	0.82	60	316	12	"	ON	
11714	"	12:29	12:29	beams	lost	after	the	first	pedestal	count																		beams lost
11715	"	13:00	13:07	10.86	10.90	15.0	366	1151	95	14.3	380	1204	135	356	ON	ON	ON	8.36	3.06	4018.57	"		57	40	2	"	ON	beams lost
11716	26.6.82	14:40	15:36	11.16	11.35	10.8	3339	8002	869	93.4	2905	9213	1080	2438	ON	ON	ON	7.90	26.39	4039.96	IBM	0.90	60	297	4	17.300	ON	
11717	"	15:37	16:39	9.00	9.36	9.3	3729	8002	971	90.3	3014	9424	1151	2233	"	"	"	6.42	23.94	4063.90	"	0.75	59	298	9	"	"	
11718	"	16:40	17:40	7.5	7.9	8.5	3534	7026	920	77.9	2677	8326	1043	1966	"	"	"	5.50	19.45	4083.35	"	0.7	58	274	10	"	"	
~~11719~~																												
11720																												

Run	Date	Start	Stop	at Run Start I_+	at Run Start I_-	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T_1 Acc. Sum.	T_2 Acc. Sum	T_1 Bit 2 $E_1>6$GeV	T_2 Bit 17 $2T \cdot E_4 \cdot 2tr$

25/6/82

16:00 Dietrich, Wiedl
As soon as the new shift arrives, K has got the IDE-magnet working. On PKR's request we raise the current to its normal value.

21.15 Trigger 3 I/P missing : ST 21 CP 2

22.00 Nord-Error 24 35045 at 54062 Ring-violation Message from Line printer
at Event Display ~~this~~ this error occurring. By using FO1 Terminal-Screen does not display any options.
Problem cannot be solved by standard procedures (switching on/off command terminal, re-loading NORD).
Phone Stiller-Cords, but he cannot solve it remotely.

22:40 Beams lost, ID trip. "Short break" on TV-Screen.

23.20 S. Cords solves the problem by re-creating YMENU.

23.52 ~~Err~~ Error message on line-printer when starting new run: "ERROR 22" ... false interrupt"

26/06/82

00:00 Barth & Odaka

00:10 slow ID-trip with alarm downstairs. Anode current lamps were on

00:15 all histograms ok

1:21 many YVOLTS errors on writer. HV's wrong by ~ 10 V
YVOLTS:TAG MFR 56 -----,
but all histograms concerned with tagging counters look OK.

2:31 beams dumped.

2:40 Standard histograms are checked. All histograms look OK.

2:57 New Fill. HV on.

6:00 beams dumped

7:00 ID-trip due to beam loss due to instability of a correction coil circuit

7:22 beams dumped.
Petra crew exchanges 3 power supplies for correction coils

8:00 Elsen & Kellenbrand

10:30 Inner detector soft alarm

12:30 ID trip due to beam loss

13:05 Beams lost due to "Sonderanfall". Short Break.

16:00 Meica, Olsson

18:31 ID soft trip. PKR had tuned without warning. We told them to behave. They promise—

19:04 No triggers, status 3. New Run OK

19:08 Dirty fill, we ask for new fill.

Run	Date	Start	Stop	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	$\int L dt$ Run	$\int L dt$ Exp.	IBM/TAPE	BP [V]	T_2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

26/6/82

21.07 YSPY detects error in T3 I/P Histogram. Looking at the histogram we observed that every 6th-Bin is empty. Starting a new run did not change anything. We called Austin Ball. He told us that the empty bins are normal (to seperate streets in the histogram). The YSPY message was probably caused by a statistical fluctuation.

29.56 Street 29, Group 2 mining again. Wait to see if stat. fluc.

27/6/82

0:00 Bethke + Steffen on shift. Started run 11727.

0:11 "NO TRIGGERS", status 3. Started new run, o.k.
(No Trigers just a few seconds after I switched on the event display

1:00 Standard histograms o.k.

1:05 ID-TRIP. beams lost

2:13 ID-TRIP. Part of the beams lost (10,5 → 8,3 mA).
PKR suggests some instabilities near by Jade.

2:17 Start new run 11730; "no Triggers" after ~~after~~ first 12 records, without accoustic alarm.
→ That's clear because chamber not yet run up! Damned nights shift!!
Start run 11731, now with I.D. That works much better.

3:26 Start run 11732

3:28 FDAS ERROR 44 TIMEOUT br 3 cr 2 (Muon chambers) and immediatly after this "No triggers". (losing "acc. event" on).
Paused run and continued: after "FDAS Readout error 46 MP 16 out of sequence 44=7"
normal data-taking

4:17 beams again, start run 11733

4:54 IBM-error 54, NORD-hung up, lots of err printout at typewriter, IBM-phone, Nord rebooted

5:13 Start run 11734

5:39 beam lost.

6:16 ~~beams~~ beam back again, start run 11735

6:25 beam lost again

7:04 beams back again start run 11736

8:00 Finch and Kobayashi

8:05 Run 11736 terminated - did not stop at 8000 events!!

8:30 Run 11737 terminated after IOR error 54

Run	Date	Start	Stop	at Run Start I_+	at Run Start I_-	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T_1 Acc. Sum.	T_2 Acc. Sum	T_1 Bit 2 $E_1>6$GeV	T_2 Bit 17 $2T\cdot E_4\cdot 2tr.$	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	SLdt Run	SLdt Exp.	IBM / TAPE	BP [V]	T_2 Rej. Ev. Fr. (%)	T_2 Acc. Sum	Bhabha	MH	E_B	ON/OFF FADC	Remarks
64																												65
11719	26.6	18.21	19.08	8.67	8.00	20.7	2481	6103	646.3	133	19.1	696	2534	ON	ON	ON	6.13	15.10	4098.55	IBM	0.9	61%	7677	174	5	17.3	ON	Dirty beams, dumped.
11720			only a few Pulser events																									
11721	"	19.54	19.55	10.3	11.0	12.7	63	194	17	2.1	64	22	44	ON	ON	ON	7.81	0.49	4099.04	IBM	0.9	54	181	8	0	17.3	ON	lost beam
11722		only a few pulser events																										
11723	"	21.00	21.13	10.8	10.7	11.0	760	1972	203	22.3	700	274	584	ON	ON	ON	8.71	6.80	4105.84	IBM	0.8	58	2156	96	1	17.3	ON	
11724	"	21.20	22.17	10.0	10.0	10.6	3447	8002	897	95.4	3079	1196	2488	"	"	"	7.75	26.73	4132.57	"	0.75	58	9235	335	8	"	"	
11725	"	22:18	23:23	6.91	6.98	8.5	3886	8002	1012	86	3179	1144	9133	"	"	"	6.61	25.67	4158.24	"	0.65	57	9210	316	12	"	"	
11726	"	23:24	23:28	6.81	6.89	7.0	188	346	49	3.4	140	49	439	"	"	"	7.14	1.34	4159.58	"	0.6	57	373	7	1	"	"	
11727	27.6.	0:00	0:11	11.06	10.62	39.0	656	1168	170	66	392	144	343	"	"	"	5.48	3.59	4163.77	"	0.8	59	1260	34	1	17.3	ON	
11728	"	0:13	1:07	10.53	10.16	10.2	3259	7826	847	86	3033	1128	2114 (1179)	"	"	"	8.26	26.91	4190.08	"	0.75	57	8293	336	12	"	"	beams lost
11729	"	7:46	7:13	10.99	10.53	11.7	1541	4012	400	46	1338	479		"	"	"	7.73	11.92	4202.00	"	0.85	59	4360	169	2	17.3	"	partial beam lost
11730			does not exist																									
11731	27.6.	2:21	3:25	8.16	7.90	9.2	3794	8002	986	91	2917	1097	2254	ON	ON	ON	6.29	23.87	4225.87	"	0.65	58	9152	274	14	17.3	ON	
11732	"	3:26	3:48	6.47	6.42	19.4	1276	2197	332	64	803	284	718	"	"	"	(4.48)	5.71	4231.58	"	0.65	59	2665	70	3	"	ON	Beams dumped
11733	"	4:17	4:54																		.92							Output lost (IBM-power, NOKIA long ops)
11734	"	5:15	5.41	8.96	9.65	11.7	1533	4068	398	47	1532	579	1298	"	"	"	8.32	12.77	4244.35	"	~~.85~~	59	2440	155	3	"	"	beams lost
11735	"	6:19	6:28	11.03	10.81	11.5	549	1526	142	16	505	188	~~427~~	"	"	"	8.66	4.74	4249.09	"	.88	55	~~974~~	~~52~~	—	"	"	
11736	"	7:08	8:08	11.09	11.12	10.9	3573	8611	929	101	3191	1148	2397	"	"	"	8.01	20.63	4277.72	"	.88	58	9352	358	11	"	OFF	
11737	"	8:08	8:30	8.88	9.06	9.6	1320	2960	343	33	1109	421	836	"	"	"	7.37	9.73	4287.45	"	.87	59	3328	124	6	"	"	
11738	"	8:31	8:46	8.27	8.44	9.0	850	1887	221	20	734	285	503	"	"	"	7.54	6.91	4294.36	"	.68	59	2056	87	1	"	"	
11742	"	9:07	9:10	7.44	7.63	10.3	124	509	32	33	123	51	76	OFF	OFF	OFF	7.47	0.97	4294.79	TAPE FILL24	.60	-11%	284	19	0	"	"	MIPtec off – problems
11747	"	9:17	10:13	7.23	7.43	7.1	3335	6174	868	61	2493	914	1431	ON	ON	ON	6.20	20.69	4315.48	"	.55	57	680	221	7	"	"	Beams dumped
11748	"	10:39	11:08	11:16	10:80	10.0	1402	3275	364	37	1225	442	952	"	"	"	8.14	11.41	4326.89	IBM	0.92	60%	3700	149	4	"	"	
11749	"	11:10	11:17	9.70	9.66	10.4	390	969	101	10	342	147	321	"	"	"	7.97	3.11	4330.00	"	0.71	57	1054	34	0	"	ON	Beams Lost
11750	"	12:58	13:49	11.04	11.26	11.5	3060	8002	796	91	2782	1028	2247	"	"	"	8.50	26.02	4356.02	"	0.92	58	8666	304	8	"	"	
11751	"	13:52	14:48	9.03	9.32	11.0	3319	8002	863	95	2925	1122	2646	"	"	"	7.68	25.49	4381.51	"	0.77	59	9549	~~323~~	10	"	"	
11752	"	14:49	14:53	7.58	7.88	10.4	207	572	54	6	186	67	189	"	"	"	7.13	1.48	4382.99	"	0.68	47	563	24	0	"	"	Beams Lost
11753	"	15:52	16:51	9.03	8.50	10.2	3446	8002	896.6	81	3072	1128	2252	ON	ON	ON	8.22	28.33	4411.32	"	0.78	58	8743	365	12	"	"	
11754	"	16:52	17:56	8.97	8.86	9.1	3807	8002	990	90.6	3248	1135	2335	"	"	"	7.21	27.45	4438.77	"	0.60	58	9279	329	10	"	"	
11755	"	17.57	19.05	~~8.44~~ 7.44	7.36	8.8	4688	8002	1220	107	3447	1284	1941	"	"	"	5.53	25.38	4470.70	"	0.55	58	9251	321	9	"	"	
11756		19.16	19.18					– 185 –										0.52	4471.22	"								Beam dumped
11757	27.6.	19.43	20.48	10.92	10.55	10.6	3402	8002	908	96	3093	1201	2506	ON	ON	ON	8.17	28.52	4499.74	IBM	0.75	56	9156	334	19	17.3	ON	
11758	"	20.49	21.24	8.87	8.70	8.6	2012	~~8450~~	524	45.0	1722	651	1119	"	"	"	7.12	14.32	4514.06	"	0.60	57	4697	184	7	"	"	beams lost
11759	27.6	22:15	23:16	10.66	10.59	9.7	3611	8002	940	91	3212	1195	2242	ON	ON	ON	8.07	29.14	4543.20	IBM	0.75	58	9120	322	7	17.3	ON	

Run	Date	Start	Stop	at Run Start I+	I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E1>6GeV	T2 Bit 17 2T·E4·2tr.

66 27.6.82

8:46 IBM error 54 again - run 11738 terminated - this time error message does not go away - We ring IBM, they say they are working on it. No new run started.

9:05 IBM error message on terminal disappears, but when we

9:07 MP16, TOF TOF all show OFF - when we turn back on get SDAS time out error Run terminated

9:10 Still can't link to IBM

9:12 SDAS reloaded

9:14 TASSO also have trouble with IBM link

9:14 ~~Easy~~ Try cutting to tape again

10:17 Beam dumped

10:30 New run - to IBM - o.k.

10:50 ID trip was passed

11:06 IBM problem - run 11748 terminated - New run started this time with FADC (Herr Bartels told us what it means).

11:17 I.D. trip / Beams lost - Short Break

12:56 After "short" break new filling - Beam current fluctuating

13:46 ID trip. Then was started

14:30 ID trip - Beams lost (Thunderstorm) Donner und Blitzen!

16:00 Detroit all Rall

Run 11753 in progress.

16:52 Start run 11764

17:56 Start run 11765

18:48 Request new fill at 19:15.

18:53 Trigger box hang-up. : status 3.

19:14 Start run 11756

19:15 Dump beams. Histograms for 11755 look ok.

19:48 Start run 11757.

20:45 Start run 11758

21:24 Beams lost. end of run 11758 Lange unterbrechung

22:15 New filling. Start run 11759

23:16 Start run 11760

ON/OFF N50	MIP	TOF	<L> ×10³⁰	SLdt Run	SLdt Exp.	IBM/TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

67

28-6-82

0⁰⁰ Elsen & Driesch

St. 21 02 is permanently active. ~~doesn't seem to be active if not used?~~

2³⁰ IBM transfer error 54 for a few seconds. Try link again → o.k.

3:45 YSPY: Trigger 3 I/P missing, struct 21 group 1. [Experts, please check]. We assume stat. fluc. for the time being.

6:05 trigger - box hang-up. Big red lamp permanently on. Stop run, start new Rall.

8:00 Rowe + Bethke

8:15 beams ready, started run 11768. Seems to be a good fill; $L = 10.9 \cdot 10^{30}$ at the beginning!!

9:10 Bethke was replaced by Komamiya

11:20 Dumps Beams

12:40 Bethke back.

12:50 Luminosity (ON-LINE) = 0

- Bethke back oushift. -

last run (11771) without Lumi-information, but all other things were quiet normal (events, TV-screen, Run-so-far [besides Lumi, Ecm also = 0]).

17:55 Started new run, but here the same effects!

No expert reachable, it's dinner-time

Tagging-histogr.: Energy lum -z, +z empty, also tagging energy +z (-z ok)

Error obviously appeared at starting run 11771.

No Lumi-events coming.

13:20 Still no experts reached.

I guess the unit just switched itself off (on the -z side!!).

Facts on the surface of things: The LeCroy HV system behind the experiment on the counting-house-side (the apparent between rear members with this is +z or -z) was in the following state: The lamp HV on was off, but the numeric indicators were at some reasonable value (1700 V?) Apparent curve: Switch to local, Press sw. HV on. ~~HV off~~ Lamp goes on. Switch back to remote. Histograms and Rates seem ok. Why no error messages?

15:50 Getting a 'No Trigger Bits' message again (several times/run)

16:00 Murphy + Minowa.

In run 11774 (+x, -z) end wall had many hits (>20) nearly every cosmic trigger. This used itself - must have been the water being at to a long resistive time.

The events with "no trigger bits" are Olsson triggers: 2 septants and 1 TOF counts. They are probably caused by timing problem. Krebbiel and Minowa investigating. (Events that actually should not have triggered because of TOF Veto)

Run	Date	Start	Stop	at Run Start I_+	at Run Start I_-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	To rej. $\times 10^6$	T_1 Acc. Sum.	T_2 Acc. Sum	T_1 Bit 2 $E_1 > 76$ GeV	T_2 Bit 17 $2T \cdot E_4 \cdot 2tr$
68				at Run Start										
11760	27.6.	23:17	0:24	8.54	8.61	8.4	3998	8002	1040	87.4	33555	9122	1259	2270
11761	28.6.	0:24	1:18	6.41	6.46	6.5	3188	5314	829	58.8	2589	5720	915	1130
" 762	"	1:57	2:58	10.44	10.65	10.3	3547	8002	923	95.1	3200	9270	1172	2302
11763	"	2:58	4:06	8.54	8.82	8.0	4056	8002	1055	84.1	3445	8708	1317	1912
11764	"	4:06	4:48	6.34	7.17	7.0	2436	4331	634	44.6	1839	4893	711	1110
11765	"	5:41	6:08	10.87	10.92	21.8	1492	3309	388	84.6	1288	3872	472	966
11766	"	6:09	7:10	9.85	9.98	9.2	3628	8002	945	87.0	3383	8804	1262	2194
11767	"	7:10	7:32	8.04	8.20	7.9	1205	2443	314	24.3	1049	2653	395	616
11768	"	8:20	9:20	8.89	8.82	10.7	3589	8505	935	100	3352	9723	1224	2341
11769	"	9:21	10:26	8.84	8.77	8.4	3851	8002	1002	84	3285	8827	1204	2029
11770	"	10:27	11:26	7.27	7.23	6.7	3517	6187	915	61	2601	6707	982	1282
11771	"	11:56	12:59	11.00	10.59	9.6	3753	8002	976	93	2697	9540	1286	2257
11772	"	12-59	14:00	8.79	8.39	7.6	3630	6461	945	80	2505	7785	1177	1585
11773	"	14-01	14:48	7.36	7.02	6.9	2832	5016	737	51	2179	5543	813	1056
11774	"	15:31	16:39	11.05	10.59	10.7	3708	8002	965	104	3279	9167	1274	2246
11775	"	16:41	16:57	8.61	8.33	8.8	964	2012	251	22	818	2259	330	501
11776	"	17:08	17:17	6.16	6.08	8.2	512	875	133	11	311	1166	109	177
11777	"	18:27	19:22	10.88	11.02	12.7	~~8002~~ 3246	8002	844	107	2999	9282	1181	2420
" 778	"	19:23	20:21	7.42	7.66	10.7	3475	8002	904	97	3045	10001	1172	2721
11779	"	20:22	21:26	7.41	7.66	9.0	3869	8002	1007	90.6	3015	10029	1929	2299
11780	"	21:27	21:35	6.22	6.46	8.6	457	929	119	10.3	331	1150	128	218
11781	"	22:15	23:23	10.88	11.03	12.1	3155	8002	821	100	2882	~~7104~~ 9720	1104	2763
11782	"	23:24	0:16	7.01	7.31	10.4	3721	8002	968	101	3041	9624	1123	2403
11783	29.6			Discard this run, please										
11784	"	00:52	01:08	6.55	6.85	7.4	933	1738	243	18	678	1955	251	389
11785	"	01:41	02:42	10.97	10.80	10.1	3621	8002	942	95.6	2941	9725	1079	2432
11786	"	02:42	03:44	8.61	8.55	11.0	3623	8002	943	104	2627	9797	974	2975
11787	"	03:47	04:49	7.10	7.07	8.2	3052	6652	950	77.7	2455	8391	926	2278
11788	"	05:26	06:41	9.80	10.15	11.3	4296	10007	1118	127	3498	12372	1312	3942
11789	"	06:41	08:00	7.55	8.21	7.0	4625	8002	1204	84.7	3351	9255	1231	1974
11790	"	08:01	08:11	6.13	6.74	6.8	494	883	129	8.7	377	870	137	161
11791	"	9:12	10:28	8.38	8.53	11.7	3929	7169	1023	79	2942	8015	1073	1568
11792	"	11:02	11:16	10.54	10.20	10.8	688	1724	179	19	670	1966	252	487

Run	Date	Start	Stop	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp.	IBM/Tape	BP [V]	T_2 Rej. Ev. Fr. (%)	Bhabha	MH	E_{beam}	ON/OFF FADC	Remarks
69																	
11760	27.6.	23:17	0:24	ON	ON	ON	7.42	29.65	4572.85	IBM	0,54	58	373	15	17.300	ON	
11761	28.6.	0:24	1:18	ON	ON	ON	6.09	19.42	4592.27	"	0.40	57	244	8	"	ON	Beams dumped
" 762	"	1:57	2:58	"	"	"	8.23	29.18	4621.45	"	0.70	59	374	9	"	ON	
11763	"	2:58	4:06	"	"	"	7.79	31.58	4653.03	"	0.55	58	381	13	"	"	
11764	"	4:06	4:48	"	"	"	6.38	15.53	4668.56	"	0.40	56	199	3	"	"	Beams dumped
11765	"	5:41	6:08	"	"	"	7.70	11.49	4680.05	"	0.80	60	148	6	"	"	
11766	"	6:09	7:10	"	"	"	8.61	31.25	4711.30	"	0.60	58	373	15	"	"	
11767	"	7:10	7:32	"	"	"	7.90	9.52	4720.82	"	0.48	57	111	3	"	"	Beams lost
11768	"	8:20	9:20	"	"	"	8.90	31.93	4752.75	IBM	0.85	59	379	18	"	ON	
11769	"	9:21	10:26	"	"	"	7.75	29.85	4782.60	"	0.75	57	348	8	"	"	
11770	"	10:27	11:26	"	"	"	6.09	21.40	4804.00	"	0.65	56	275	6	"	"	Beams dumped
11771	"	11:56	12:59	"	"	"	?	3068?	4836.56?	IBM	0,90	58	393	13	"		Tagging problem starts
11772	"	12-59	14:00	"	"	"	(1.45)	5.26	4839.84	"	0.75	58	351	11	"	ON	Stop run – tagging problem fixed
11773	"	14-01	14:48	"	"	"	6.03	17.09	4856.93	"	0.63	56	204	6	"	"	Beams dumped.
11774	"	15:31	16:39	"	"	"	7.61	28.21	4885.14	"	0.75	59	395	11	"	ON	
11775	"	16:41	16:57	"	"	"	7.53	7.26	4892.40	"	0.75	57	103	7	"	ON	Beams lost (partly)
11776	"	17:08	17:17	"	"	"	4.99	2.56	4894.96	"	0.65	62	36	1	"	"	Beams dumped.
11777	"	18:27	19:22	"	"	"	8.37	27.17	4922.13	"	0.90	59	357	11	"	"	(YES)
" 778	"	19:23	20:21	"	"	"	7.36	25.59	4947.72	"	0.87	60	321	9	"	(ON)	
11779	"	20:22	21:26	"	"	"	6.13	23.73	4971.45	"	0.70	59	294	12	"	NO (OFF)	
11780	"	21:27	21:35	"	"	"	4.82	2.20	4973.65	"	0.65	58	39	0	"	ON	Beams dumped.
11781	"	22:15	23:23	"	"	"	8.22	25.94	4999.59	"	0.9	59	344	11	"	ON	
11782	"	23:24	0:16	"	"	"	7.06	26.28	5025.87	"	0,6	58	324	12	"	"	
11783	29.6									"	0.6	~~58~~	~~71~~	~~2~~	~~—~~	~~—~~	No Tag or Lumi triggers
11784	"	00:52	01:08	"	"	"	5.59	5.21	5031.08	"	0.6	56	71	2	"	—"—	BEAMS DUMPED.
11785	"	01:41	02:42	"	"	"	6.85	24.82	5055.90	"	0,9	58	305	16	"	"	
11786	"	02:42	03:44	"	"	"	5.33	19.30	5075.20	"	0.7	58	227	6	"	"	
11787	"	03:47	04:49	ON	ON	ON	4.26	15.56	5090.76	"	0.64	58	204	3	17.300	ON	BEAMS DUMPED.
11788	"	05:26	06:41	"	"	"	6.48	27.84	5118.60	"	,95	58	378	14	"	"	
11789	"	06:41	08:00	"	"	"	5.87	27.17	5145.77	"	0.72	57	320	9	"	"	
11790	"	08:01	08:11	"	"	"	*	* (3.1)	5148.87	"	0.53	52	39	0	"	"	* See notes overleaf.
11791	"	9:12	10:28	"	"	"	*	24.81	5173.68	"	0.69	57	327	22	"	"	Beams lost *
11792	"	11:02	11:16	"	"	"	8.58	5.90	5179.58	"	0.82	58	75	4	"	"	Beams lost

* Beam energy erroneous in Head bank

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E1>6GeV	T2 Bit 17 2T·E4·2tr.

23/6/82.

In the main trigger box, sockets 25 and 26 have group 5 override switch set. Why?

2355 We heard a loud crack, like a spark, from the experiment. Everything seems OK.

All main drift currents OK, except (-z, $\bar{+}$z) roof, rather with chambers 347 etc., slightly high.

00°° Hedgecock, Olsson | 29.6.82

At begin R 11783, at event 25: Message No events --- A red band without message appears on screen, and Int·Lumi = 0. We check the Lumi HV. There is no alarm !!!

The HV is on, but no triggers with tag. Wriedt will come

We switch all off, then on again. Now it seems OK!

The last run has more problems: All leadglass (except spinning block) histograms empty. But trigger bits for total E, etc are there?

Test run after run 11784: tagging latches (input to latch unit #22) are there. Because as part of tagging system logic had been tinkered I assume that the problem is beyond the tagging logic (the latch unit as the earliest). Trigger-experts, please investigate!

06°° Timeout crate 6'4 (1D ring 3)

Because Pluto's magnet is off, Mark J and TASSO suffer from high background. We are firmly well off!

8°° Start R 11790 All Lumi = 0 again This time all bits are in and LG histogs are OK — <L> and ∫Ldt = 0 on run summary. We obtain ∫Ldt from N_{double} compared with the corresponding no. for previous runs.

Note! Ebeam is 0. for this Run. Noted by Kuwamoto 20/9-82 True also for R 11791 Noted by PWA 1/8-83! JO

9:00 Petra has computer problems

run down DIDE-magnet. → 2000 A

9:10 magnet → 7500 A and now fill by hand

9:18 Start run 11791

10:30 During run 11791, the Colour TV scalars did count, but on the run summary, the LUMI and INT. LUMI read 0.0. The ∫Ldt was taken from the TV for this run — BUT the NORD thinks that the beam energy is 0.001 GeV !! Check with TASSO — they have had problems and have not taken data in the past couple of hours. MARK J say PLUTO had some trouble with their computer which is now fixed — they also saw 0.001 GeV on their TV screen.

The beam energy on the run summary is taken at the end of the run — since the last run finished with beams being lost + I.D.-trip etc., this may be the cause.

11:12 Idch current to high, seems lost

ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	∫Ldt Run	∫Ldt Exp.	IBM TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

29.6.82

13°° Peter has broke power-supply, run down magnet → 2000 A.

15⁴⁵ ID trip — Anode current — apparently unprovoked.

MARK J say PETRA has power supply problems; they will dump at 16°°.

16°° Schiemann + Bethke on shift

- Bethke takes cosmics for 30 min —

17⁷⁸ beams again, started run 11799

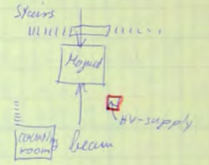
No Lumi events again! → L = 0.00 !!

Obviously HV-power-supply says "HV on" and shows correct values and gives them to Word, but the HV isn't on.

Switch to "Local", "HV on", "Remote"; then it works again (until next new Fill???)

(See plan for location →)

Check and do this at every first start after a new filling!



Wriedt will repair it tomorrow!

18°° Still TSO-Terminal doesn't work. People from IBM tried but did not succeed to repair it. They will continue tomorrow. So no connection to the outer world!

18³⁹ Nord hang up, level 14; reloaded; ok. now

No summary for run 11800. Started 11801

18⁵² Beams lost.

20²⁷ beams again. Start running

22°° Beams lost. Again at ~8 mA. It's the third time.

22³⁵ beams back again. Start run 11805

23⁴⁵ beams lost. 4th time at at ~8 mA

30.6.82

0:00 Bartel & Goddard

1:00 std histograms for run 11807 ok.

There is a whole bunch of noisy wires on ring 1. This has already been so before and Bethke must have seen it, so we don't worry

3:15 Stage 3 trigger hang up. Pushing bottoms on the trigger box cures the problem.

4°° Felst replaces Bartel

Run	Date	Start	Stop	at Run Start I_+	at Run Start I_-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	T_0 rej. $\times 10^6$	T_1 Acc. Sum.	T_2 Acc. Sum	T_1 Bit 2 $E_1 > 6$ GeV	T_2 Bit 17 2T · E_4 · 2TR
11793	29.6.	14:41		10.84	11.11	10,4	2673	6131	695	72	2349	7450	837	1850
11794	"	15:30	16:02	5.08	9.42	11.0	1626	3643	422	46	1437	4192	537	975
11795	COSMIC RUNS FORWARD													
11796														
11797														
11798														
11799	29.6	17:18	18:14	11.08	11.23	11,7	3314	8002	862	100	2806	9893	1105	2695
11800	"	18:15	18:39	8.97	9.20	12,2		3495						
11801	"	18:50	18:54	8.06	8.30	11.0	239	581	62	6	184	741 ~~371~~	53	211
11802	COSMIC RUN													
11803	"	20:27	21:23	10.97	11.27	12.0	3318	8002	863	103	2895	9819	1084	2534
11804	"	21:24	22:05	8.88	9.30	12.6	2394	5968	622	78	2078	7726	752	2377
11805	29.6	22:36	23:32	10.74	11.14	10.6	3358	8002	873	92	3053	9296	1124	2298
11806	"	23:34	23:51	8.88	9.43	9.4	990	2199	257	24	851	2565	327	645
11807	30.6.	0:25	1:26	10.91	10.72	9.8	3649	8002	949	93	3058	9619	1111	2348
11808	"	1:27	2:38	8.68	8.65	8.1	4222	8002	1096	89	3248	9575	1214	2162
11809	"	2:39	3:22	7.1	7.1	8.0	2551	4102	663	53	1718	4726	635	848
11810	"	3 57	5 01	10.7	10.9	9.2	3803	8002	988	91	3172	9367	1155	2143
11811	"	5 02	6 17	8.59	8.84	7.3	4506	8002	1171	86	3305	9279	1206	1859
11812	"	6 18	7 04	6.98	7.23	6.2	2709	4341	705	43	1902	4818	686	883
11813	"	7:29	8:03 36	10.77	10.74	9.8	3648	8002	950	92	3268 2154	9441	1127	~~1110~~ 2156
11814	"	8.38	9:48	8.33	8.55	8.0	4188	8002	1031	88	3263	9512	1233	1936
11815	"	9:49	10:29	6.86	7.00	8.5								
11816	"	10:30	10:34			98.0								
11817	31.	14 07	15 23	5.96	6.22	7.9	935	1522	243	19	604	1972	223	2153
11818	"	15:05	15:07	10.01	10.11	11.9	102	264	27	3	94	296	34	71
11819	"	15:28	15:41	9.02	9.23	9.4	755	1536	196	18	615	1978	234	458
11820	"	15:43	15:57	9.56	8.83	9.1	788	1647	205	19	636	1995	219	471
11821		16:30	16:36	10.79	9.36	10.2	328	768	85.2	8.7	283	901	102	224
11822	"	16:37	17:42	10.41	9.10	9.4	3888	8002	1012	95.4	3127	9763	1143	2558
11823	"	18.22	19:03	7.50	6.62	7.2	2453	4774	639	46	1657	5197	599	5559
11824	"	19:32	20:35	10.90	10.24	9.7	3763	8002	980	94.6	3206	9884	1224	2341
11825	"	20:36	21:49	8.40	8.19	7.8	4353	8002	1133	88.4	3242	9803	1142	1949
11826	"	21:49	22:14	6.87	6.77	9.2	1490	2401	388	36	957	2892	320	8547
11827	"	22:42	23:14	10.81	10.39	10.6	1878	4148	489	51.7	1656	4849	601	1235

ON/OFF N50	ON/OFF MIP	ON/OFF TOF	$\langle L \rangle$ $\times 10^{30}$ cm^{-2}sec^{-1}	$\int L dt$ Run nb^{-1}	$\int L dt$ Exp. nb^{-1}	IBM/TAPE	BP [V]	T_2 Rej. Event. Fr. (%)	Bhabha	MH	Ebeam	FADC	Remarks
"	"	"	8,20	21,93	5201,57		0.88	IBM	273	10	17.3	ON	
ON	ON	ON	7,77	12.64	5214,15	IBM		57	155	2	17,3	"	
-"-	-"-	-"-	5,61	27.00	5231,15	IBM	0,92	IBM 58	355	20	17,3	-"-	Tagging off at Begining; $\int L$ scaled fr. Bhabha
"	"	"	8,39	10.95	5242,10	"	0.85				17.3	"	Vorst hang up!
"	-"-	-"-	8,09	1,93	5244,03	-"-		56	15	0	17.3	-"-	beam lost
-"-	-"-	-"-											
-"-	-"-	-"-	7.87	26.12	5270,15	IBM	0.75	59	335	9	17,3	-"-	
-"-	-"-	-"-	8.00	19.46	5289,31	IBM	0.75	60	234	7	17,3	-"-	beam lost
"	"	"	8.09	27.82	5317,13	IBM	0.80	58	348	10	17,3	-"-	
-"-	-"-	-"-	7.31	7.44	5324,37	IBM	0.75	57	105	4	17,3	-"-	beam lost
"	"	"	7.41	27.02	5351.39	"	0.80	59	337	11	"	-"-	
"	"	"	6.43	27.15	5378.54	"	0.60	59	354	9	"	"	
"	"	"	5.20	13.27	5391.81	"	0.55	57	165	3	"	"	beams dumped
"	"	"	7.27	27.66	5419.47	"	0.80	58	360	11	"	"	
"	"	"	6.56	29.54	5449.01			57	356	16	"	"	
"	"	"	5.32	14.42	5463.43			57	190	1	"	"	beams dumped
"	"	"	7.48	27.30	5490,73	IBM	0.9	60	325	15	"	"	The magnet probably went off during the run 11817
"	"	"	6.60	27.62	5518.35	"		59	354	12	"	"	nearly 100% dead time
"	"	"				"	0.55				"	"	— beams dumped —
"	"	"				"					"	Off	— beam dumped —
"	"	"	5.07	4.74	5523.09	"		59	29	0	"	Off	
"	"	"	7.39	0.75	5523.84	TAPE F22 B41	0.77	60	9	0	"	ON	
"	"	"	7.33	5.54	5529.38	TAPE	0.65	61	79	0	"	"	
"	"	"	6.70	5.28	5534.66	IBM		57	61	3	"	"	Beam lost
"	"	"	~8.1	~2.7	5561.66	IBM	0.8	54	36	1	"	ON	Tag manifold #61 off. silly MMI
"	"	"	7.46	2899	5590.65	"	0.7	59	335	14	"	ON	FADC NOW STANDARD
"	"	"	5.44	13.34	5603.99	"	0.7	58	118	6	"	"	beams dumped
"	"	"	7.90	29.74	5633.73	"	0.7	59	384	6	"	"	
"	"	"	6.24	27.18	5660.92	"	0.6	58	334	14	"	"	
"	"	"	5.15	7.68	5668.60	"	0.5	56	84	6	"	"	beams dumped
"	"	"	8.42	15.81	5684.41	"	0.8	57	196	10	"	"	beams lost

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E>7.6 GeV	T2 Bit 17 2T·E>2 tr.	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	∫Ldt Run	∫Ldt Exp.	IBM TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

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8:00 Onto, Ahrndt

9:55 ID trip (chain current alarm!)

~10:10 luminosity suddenly very low ~ 1/5 of ~~xxxx~~
steps of jet-chamber time map looks unusual (for me as a non-expert). ~~due to very low luminosity~~
~~wrong counts~~. Olsson is investigating.
In addition: unreasonable high dead-time!
Stop run, start new: true: ~ 98% dead-time
TOF-multiplicity I totally out of shape, other TOF-distributions look normal.
Collinear TOF + tracks - triggers sort of exploding. On the other hand: beam-pipe current reasonable.
We are closing the experts.

10:45 Magnet found to be tripped (when did it happen?). Would explain above observations.

11:00 ID had not tripped. I found, that magnet trip cable was disconnected! This is very dangerous!! I am really mad! NOH (who?) the ID, will be shot! (Alfred P. Nozaki)
Whoever will disconnect a cable from
· At the beginning of run 11815 (9:50) the magnet was on.
· The first message on the line-printer appeared after the start of run 11816 (10:30).

12:35 Information from K: a relais has to be exchanged, it will take approx. another hour.

12:55 Magnet repaired

13:57 H.V (LRS) failure: cannot switch on.

14:05 Start data taking. (Finch replaces Wrienz)

14:20 Navoska says HV's are fishy - check all detectors regularly - especially tagging bits, everyone goes off to JADE meeting.

14:30 IBM down back at 16:00 (parity!) - F.

15:00 Two ID trips at start of run I

15:50 IBM back (early!)

15:57 Beam lost

16:00 Ball, Petersen on shift.

16:27 New fill ready. Start run 11821. after an ID H.V input alarm which reset OK.
No HCMI triggers. Both tagging energy HCMI buffers empty. Histmap ½ empty.
Log H.V. mainframe hadn't come on. (#61).
Since HCMI values crazy, decide to start new run 11822.

17:42 Run 11822 ended. Pause for work on T3 electronics (AB) & IDAS software (DC)

18:20 Start run 11823. All permanent enables in T3 endwall sectors, introduced to account for dead chambers, now removed; both -x quadrants have no dead chambers now, so, with the current subtrigger & multiplicity requirement, no correction is necessary for the few dead chambers in the +x quadrants. AB.

19:19 new filling. Start run 11824

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NOTE: If one starts with F8 to F8, there will be no voltage clocking!
⇒ Therefore, the FADC readout is now incorporated under F1 start function D.C.

20:34 Start run 11825. Histograms from 11824 look OK.
21:47 Start run 11826.
22:42 Start run 11827.
23:14 Beam lost, I.D. trip
Notice magnet has spontaneously started to run down → reached 1500A.
Switch from computer to manual, and magnet runs itself spontaneously back to exactly 7500A.
..... clever magnet this, I did nothing but switch to manual! With some hesitation, I switch back to computer — seems OK.

1.7.1982 Murphy and Nozaki

00.20 Start run 11828.
00.40 Magnet trips off. Fault on "dvdrfd. wasserdek. kabel", which cannot be reset. We call magnet experts.
01.10 They fixed. Magnet on again.
01.22 Beam lost.
01.30 magnet current went down to ~2000A then it went up automatically.
But no failure lamp on the power control panel.
02.10 Start run 11830
03.10 Magnet trips off. Fault is the same as before. We called expert again.
Fixed

8:00 Onto, Feist
9:46 Magnet tripped. some fuses broken, Pellat and Co repairing
11:20 Magnet fixed
11:50 Magnet tripped again, but went up to nominal value again as last night during filling time
12:20 Short machine break. Magnet current set down to 2000.
PKR expect about two hours break. A.R.F must be changed
Magnet current set down to 2000.

16:00 Bartl & Rowe
17:15 There may be a problem when the magnet current is raised;
At a value of ~ 6000 amps the reading may suddenly jump

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E1>6GeV	T2 Bit 17 2T·E4·2tr.
11828	1.7.1982	0022	0039	9.19	9.66	10.9	930	2164	242	26.3	848	2627	298	689
11829	"	0120	0124	8.14	8,76	8.7	239	484	62	5.3	173	584	58	142
11830	"	02.14	03.13	10.63	10.62	9.5	3429	7195	891	84	2861	8821	992	2141
11831	"	0335	0453	6.52	6.63	7.2	4666	8002	1213	87	3387	9746	1220	1904
11832	"	0453	0504	6.35	6.84	6.8	626	1085	162	11.0	454	1241	151	270
11833	"	0556	0616	9.64	9.91	9.8	1172	2566	305	30	1032	3178	347	759
11834	"	0642	0710	8.97	9.27	8.8	1592	3129	414	36	1226	3812	441	870
11835	"	0852	9:48	10.2	11.0	9.6	3032	6199	~~789~~	75	2574	7894	939	1833
11836	"	11 29	11 48	6.3	7.0	6.6	1129	1824	294	19	759	2169	266	365
11837	"	1420	1531	10.9	11.3	10.9	3949	8002	1028	91	3160	9921	883	2395
11838	"	15 32	1547	8,1	8.7	9.2%	884	1723	230	21	687	2274	226	~~2390~~ 557
11839	"	18:04	18:05	10.72	10.83	10.3	3661	8002	953	98	3210	9865	1195	2485
11840	"	19:05	20:13	8.56	8.80	8.9	4035	8002	1050	96	3117	10108	1132	2443
11841	"	20:14	20:22	7.11	7.35	7.8	464	850	120	9	359	1042	108	238
11842	"	22-35	23-10	11.02	10.58	11.1	2101	5158	546	60	1958	6184	728	1637
11843	"	23.4	23.24	9.49	9.23	10.1	709	1632	184	19	644	1976	213	498
11844	2.7.82	0 41	1 02	10.97	10.84	14.2	3082	8002	799	113	2889	10719	1024	3279
11845	"	1 03	1 58	9,03	9.01	11.5	3281	8002	854	98	2981	10809	1086	3059
11846	"	1 57	3 03	7.61	7.61	8.2	3898	~~8742~~ 1	1014	83	3038	9049	1056	2166
11847	"	3:56	4:53	11.5	11.0	11.6	3187	8002	829	96	3026	9809	1125	2864
11848	"	4:53	6:02	9.2	8.9	12.0	3943	8002	1026	123	3156	9952	1174	2449
11849	"	6 07	7:17	7.6	7.3	7.1	4400	7632	1145	81	3271	8945	1135	1878
11850	"	~~8 12~~ 8	~~9 06~~ 9	~~10.75~~ 10.8	11.15	15.5	3129	7077	814	126	~~2774~~ 2774	8809	991	2390
11851	"	9.47	10.46	8.28	8.40	10.2	~~3542~~ 3542	8002	930	94	3182	9712	1165	2546
~~11852~~	"	10 47	11 36	8.25	8.40	8.8	2934	5849	764	67	~~2373~~ 2373	7064	857	1657
11853	"	12.31	13.32	9,7	11.04	10.1	3641	8002	947	95	3079	10003	1090	2601
11854	"	13.39	13,40	7,73	8.15	9,7	49	182	12,7	1,2	55	118	14	41
11855	"	14.17	15,13	6.92	8.09	7.8	3345	6053	870	65	2735	6888	859	1395
~~11856~~	"			~~7.08~~	~~11.82~~			t&t						
11857	"	16:12	16:16	9,2	9,2	12,2	232	707	604	7,4	274	683	74	786
11858	"	1648	1716	11,2	11,0	15.3	1251	4453	326	50	1404	3662	412	1035
11859	"	1927	2056	10.74	11.04	10.1	3538	8002	921	93	3533	9338	1113	2447
11860	"	20:18	21 28	6,96	7,67	8,2	1890	3533	474	38.8	1192	4101	515	~~1468~~ 889
11861	"	21,32	22 15	6,13	6,79	7,6	2565	4792	668	51.0	2131	5315	688	5481
11862	"	22.16	22.18	6.06	6,71	6,9	114	202	29,6	2,0	82	218	26	214

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E1>6GeV	T2 Bit 17 2T·E4·2tr.

Run	Date	N50	MIP	TOF	<L> ×10³⁰	Slat Run	Slat Exp.	IBM/TAPE	BP [V]	T2 Rej Ev Fract (%)	Bhabha	MH	Ebeam	FADC on/off	Remarks
11828	1.7.1982	ON	ON	ON	8.57	7.97	5692.38	IBM	0.8	58	87	5	17.300	ON	
11829	"	"	"	"	6.94	1.66	5694.04	"	0.7	58	21	0	"	"	Beams lost
11830	"	"	"	"	7.73	26.5/	5720.55	"	0.7	58	342	12	"	"	
11831	"	"	"	"	6.57	30.64	5751.19	"	0.5	58	383	12	"	"	
11832	"	"	"	"	6.22	3.90	5755.09	"	0.5	55	52	1	"	"	Beams dumped
11833	"	"	"	"	7.83	9.17	5764.26	"	0.8	59	114	4	"	"	Magnet fault
11834	"	"	"	"	6.89	10.97	5775.23	"	0.7	57	146	9	"	"	Beams lost
11835	"	"	"	"	8.08	24.5/	5799.74	"	0.8	63	317	5	"	"	magnet tripped at end
11836	"	"	"	"	5.38	6.07	5805.84	"	0.5	58	71	4	"	"	beams dumped
11837	"	"	"	"	7.50	29.61	5835.45	"	0.8	63	385	5	"	"	
11838	"	"	"	"	6.48	5.33	5841 18	"	0.6	61	71	2	"	"	beam lost
11839	"	"	"	"	8.17	29.91	5871.09	"	0.8	59	400	8	"	"	
11840	"	"	"	"	6.91	27.89	5898.98	"	.65	58	320	10	"	"	
11841	"	"	"	"	6.76	3.14	5902.12	"	.5	59	43	3	"	"	beam lost
11842	"	"	"	"	9.00	18.91	5921.07	"	0.80	58	208	7	"	"	
11843	"	"	"	"	7.86	5.57	5926.60	"	0.70	59	62	1	"	"	beams lost
11844	2.7.82	"	"	"	8.29	23.47	5952.07	"	0.30	61	311	13	"	"	
11845	"	"	"	"	8.15	26.73	5978.80	"	0.92	59	309	15	"	"	
11846	"	"	"	"	6.90	26.91	6005.71	"	0.65	59	318	11	"	"	beams dumped
11847	"	"	"	"	841	26.82	6032.53	"	095	58	354	7	"	"	
11848	"	"	"	"	7.19	28.35	6060.88	"	0.72	59	337	14	"	"	
11849	"	"	"	"	6.10	26.80	6087.74	"	0.58	58	304	7	"	"	beams dumped
11850	"	"	"	"	7.92	24.78	6112.53	"	0.85	59	317	7	"	"	beams lost
11851	"	"	"	"	8.22	29.35	6141.88	"	0.9	59	414	5	"	"	
~~11852~~	"	"	"	"	7.26	21.23	6163.17	"	0.75	58	269	12	"	"	beams lost
11853	"	"	"	"	8.04	29.29	6192.46	"	0.85	59	341	6	"	"	
11854	"	"	"	"	7,8	0.38	6192.84	"	0.6	35	9	0	"	"	magnet trip ← New T1 trigger installed
11855	"	"	"	"	5.87	19.64	6212.48	"	0.5	58	251	5	"	"	beams dumped
~~11856~~	"	"	"	"					0.8						
11857	"	"	"	"	7,74	1,80	6214.28	"	0,65	59	80	0	"	"	Beam loss
11858	"	"	"	"	7.44	9.31	6223.59	"	0,85	59	121	4	"	"	Beams lost
11859	"	"	"	"	7.46	26.39	6249.98	"	0.55	58	352	6	"	"	
11860	"	"	"	"	6,56	11,85	6261.83	"	0,5	60	166	7	"	"	
11861	"	"	"	"	6,11	15,68	6277,61	"	0,45	57	213	7	"	"	
11862	"	"	"	"	5,40	0,62	6278,23	"	0,45	56	8	1	"	"	

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E1>6GeV	T2 Bit 17 2T·E4·2tr.

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to values of 8000 amps. The magnet control program will stop signalling an unstable current reading (DVM execution error 8) and the bell on the terminal that drives the magnet will ring. (so better use TEKTRONIX terminal at present). If the current does not drop to lower values after a short while

① Put the computer ON/OFF switch to OFF on Tektronix TADE Power Supply Panel.
② Press the lower button (for some seconds)
③ Wait until measurement is stable (check on Digital Voltmeter)
④ Put the computer switch to ON.
⑤ Operate the magnet from terminal (GO 7500 etc)

The problem will be investigated tomorrow, when Pillat is around.

E.E.

17.55 Petra back up again
20:00 Std. histograms run 11840 ok
20:30 Beam lost without ID-trip
IBM down experts are at work probably it is a failure of the link.
20:40 IBM up again
20:45 Remotely controlled by B. Narocka LeCroy HV control unit was exchanged. Same problem as before.
Conclusion: with high probability (95% CL) the control unit is ok. 5% chance that both units are 'schrott'!

Since 20.30 DESY is down. Run magnet down to 2000A. No idea when it will come up again (DESY I mean, of course).

In the Forward-Muon-Logics new PROMS 4 were installed which allow separate logics on the outer 3 of a quadrant and on all 4 of a quadrant. Thus the inputs 4x of ForMu-Counters 4, 5, 12, 13 are reconnected to the latches and will hopefully appear in the T1-Input Histogram. (Note the change: No margin)
The new outputs of the logics are now

4: Coplanar ±1 Outer 3
5 Opposite Quadrant-Or Outer 3
6: Coplanar ±1 All 4 Counters
7: Opposite Quadrant-OR " "
8: OR(1-8) + OR(9-16).

ON/OFF N50	MIP	TOF	<L> ×10³⁰	SLdt Run	SLdt Exp.	IBM /TAPE	BP [V]	T2 Rej. Ev. Fr.(%)	Bhabha	MH	Ebeam	Remarks

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To get the same function of the trigger as before, I connect T1 postpone (and T2 post.) to Output 5. The rates should be the same.

22:30 Petra operation resumed
23:10 temporary IBM-link hang up ended run 11842
23:20 beams lost without ID-trip
23:30 Magnet went down to 0, without human interference it went up again to 7500

2.7.82

0:00 Meier & Kaneaki
1:03 μ-create 13 missing, reset → o.k.
2:21 YSPY detects error in T3 I/P Street 21 Group 2. But corresponding Bin of Histogram is not empty. Message was probably caused by statistical fluctuations.
3:00 Beams dumped.
4:35 ID trip. (Anode current, HV output and 1R1 spark.)
5:18 " " "
5:33 Trigger stopped on Status 3. Reset-Procedure helped
6:10 YSPY detects error in T3 I/P Str. 21 Gr 2 again.
7:15 Beams dumped.
7:19 Magnet trips off, current went rapidly down to ~500 A and after that went back to 7500 A automatically. The whole procedure happened within a very short time period of about 3 min!

8:00 Clarke, Felst

Before Run 11854 a new T1-accept-Trigger was installed to catch the forward Muons without the chambers. Logics:
Opposite Endcap-Quadrants (Collinear), but not more than 3 Endcap-Quadrants
and Coplanar FWMu-Counters ±1, but always on opposite sides of the beam-pipe
all Counters included

13.30 Magnet trip
(Problems with cooling water. Pillat fixed it)
If the above magnet trip occurs again call me before the current is back to the old value. Look at panel for any error indications! E.E. 2509.

16:00 Murphy, Olsson
Now HV checking program runs again. It took one day of error finding, 2 hours of LeCroy expert (~100 DM/hour), who pays me? The error was so complicated, that it is nearly impossible to describe.

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E>7.6GeV	T2 Bit 17 2T·E4·2tr.

ON/OFF N50	MIP	TOF	<L> ×10³⁰	SLdt Run	SLdt Exp.	IBM TAPE	BP [V]	T2 Rej. Ev. Fr.(%)	Bhabha	MH	Ebeam	Remarks

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20⁰⁰ ID alarm. It could not be reset immediately since there was a spark alarm and a chain current alarm. This all the time. can be only 1 LED on in the alarm unit. The Spark alarm LED was not on, until chain current alarm was pulled out, terminated and reset. Then Spark alarm LED went on and reason seen, namely spark alarm in RT. Then reset and all OK.

21¹⁰ We notice an anomaly in TOF mean ADC histogram; counter 73 is low in run 11859 and run 11860. (Narodi informed)

21²⁸ Teletype prints ERROR 39 in 37643 (Memory out of range. Run has stopped on the colour screen but continues ("in the dark"). Starting a new run seems fine, colour TV not working with EXIT, ESC ... etc, we are back to normal(?)

22¹⁰ During ramping him, we get Magnet fluctuations. We see it just as current goes to zero and starts increasing again. Very peculiar!

22¹⁶ Computer stops again, the colour screen is dead. Same recipe as above works.

2230 · Magnet fluctuation; this time it goes up to 8200, then down to 7500 again.

2240 · NORD control terminal hangs up, but run 11863 continues to take data. We get several "disk driven transfer errors".

3.7.82

0:00 Cords, Matrimura
operating system and data acquisition system newly generated
IBM problems went away after IPL

2:29 Nord hang-up, when running display in parallel with data acquisition
TCURTV crashed again with "memory out of range"

3:35 beams lost

6:30 Magnet down Run stopped
pump switched off, reason unknown
after observing small deviation of tagging HV, all HV's have been set again

7:00 MD1 switched over to right-hand dish unit (D.C.)

8⁰⁰ Eisen, Ono

8⁵⁵ Magnet trips during injection. Goes down to 2000 Amps and then up again to 7500.
To Pillat: Sollwertgeber steht auf 7500 Amp. Alle Anzeigen normal. "Regulator" und "Operating" blinken!

9:30 NORD hangs on LEVEL 14! Restart Nord

9:50 ~~NORD~~ TCURTV crashed, event display was running in parallel. "Memory out of range" appeared
Restart NORD

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On both reloading procedures the Nord signalled "False interrupt, Level 12"

10:10 Time out branch 1 case 2 μ-chamber. No counts. Pause/Continue helps but then get Job readout error 46 MP-16 out of sequence 44 ≠ 1. Run continues.

11:20 NORD hangs on LEVEL 14 after "memory parity error". RESTART NORD.

12:00 Mark J calls again: PETRA has trouble with synchrotron. So beams will be kept for a while.

12:00 Temperature alarm for Kontrollraum. 21°C at DL8 corner. Call Kontrolltechniker. Some water is leaking out of the refrigerator of the air conditioning. Switch off DL8's on (short break at PETRA anyhow)

13:30 Magnet trip. Call K-people. Pump was off.

15:11 Cooler for the counting room fixed. Switched on DL8's again. (Except for one)

14:50 Petra still has problems with superconducting cavity.

As a temporary measure against unnoticed trips of the magnet (especially when it goes up and down by itself) there is the program MCHECK which will give an alarm if the current changed from its normal # value and until it back to that. ⇒
It has to be started again when the NORD hangs up and should be used from a terminal in "software part" of control room.

```
.
 13.22.04      3 JULY  1982
 SINTRAN 77.05.17.C/II
     - J A D E -

ENTER J
PASSWORD:
OK
.MCHECK

START OF MAGNET CHECK PROGRAM
*****************************

VERSION OF 03/07/82

>WATCH-MAGNET
III DUM III CURR=  7499.8 +-     0.0

MAGNET WILL NOW BE CHECKED EVERY 10 SECS.
TO ABORT PROGRAM, PRESS ESC-BUTTON.
```

15:30 Injection. Magnet back to 7.5kA.

15:58 Run 11882 started

16⁰⁰ McCann & Konamiya on shift
DL8 problem. Ring 3. Time out branch 6-1

16³⁰ Petra has problems. Beams dumped.

16³⁵ Magnet trips. It was automatically switched on again.

~18⁰⁰ Nord hang up:
When restarting the NORD a message ring violation

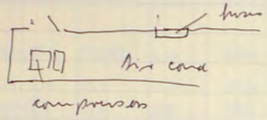
~19²⁰ Air condition system does not get the temperature below 21°

Run	Date	Start	Stop	at Run Start I_+	at Run Start I_-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	To rej. $\times 10^6$	T_1 Acc. Sum.	T_2 Acc. Sum	T_1 Bit 2 $E_1 > 6$ GeV	T_2 Bit 17 2T · E_4 · 2tr.
82														
11863	2.7.82	23.03	?	10,4	8,4	10.9		6660						
11864	3.7.82	0:46	1:00	7.4	7.1	7.4	821	1560	212	15.9	682	1744	202	366
11865	killed because IBM was down													
11866	3.7.82	1:19	1:33	6.8	6.6	6.8	767	1354	200	13.6	647	1489	213	281
11867	"	2:14		10.7	10.2			2343						
11868	"	2:34		9.8	9.4	11.0	3258	8002	848	93.4	3543	9175	1166	2298
11869	"	3:26	4:20	8.1	7.7	8.7	3186	6619	829	72.4	7854	7808	896	1598
11870	nonsense													
11871	7.7.82	6.29	6:35	9.8	10.4	10.0	347	875	86	9.1	397	906	113	222
11872	"	7:01	8:05	8.8	9.3	9.6	3768	8002	986	94.8	3552	9830	1116	2062
11873	"	8:06	8:45	8.1	8.5	7.7	2811	4924	732	56	2199	5993	702	1266
11874	"	9:30	9:35	NORD hangs on LEVEL 14 after ≈ 150 events										
11875	"	9:42	9:51	9.4	9.5	12.3	503	1311	131	16	565	1511	171	426
11876	"							20	Nord hang up					
11877	"	9:54	10:41	9.9	9.7	13.4	3389	8002	882	118	3464	9862	1108	2727
11878	"	10:51	11:20	8.1	7.3	8.4								
11879	"	11:29	12:39	7.2	7.1	10.7	471	8002	1085	116	3217	10497	1003	3227
11880	"	12:39	13:04	6.1	6.0	6.1	1452	2552	338	23.1	983	2703	322	995
11881	"			Stopped because of DL8 start-up problems (only pedestal events)										
11882	"	15:58	16:04	9.98	10.31	29.9	273	713	71	21	242	599	72	153
11883	4.7.82	2.01	2.34	10.69	10.09	49.5	1773	5073	461	228	2166	3672	401	1299
11884	"	2.57	2.58	8.23	2.97	53.9	12	43	3	2	4	33	0	11
11885	"	3.00	3.21	8.17	7.93	43.6	1275	4323	332	165	982	3794	263	1711
11886	"	3.21	3.27	7.70	7.48	42.1	308	1079	80	34	222	932	58	435
11887	"	3.28	3.47	7.56	7.33	29.3	1120	3891	291	85	923	3580	276	1504
11888	"													
11889	"													
11890/11891	"													
11892	"	5.42	6.33	10.72	10.78	12.7	3099	8002	805	102	3667	8605	1097	2338
11893	"	6.34	6.42	8.83	8.95	10.2	410	969	106	10.9	453	1044	131	232
11894	"	6.45	6.55	8.60	8.61	9.1	601	1367	156	14.2	632	1446	198	304
11895	"	6.57	7.03	8.18	8.31	12.8	370	963	96	12.3	425	1130	111	368
11896	"	} Junk : NORD problem												
11897	"													

Run	Date	Start	Stop	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp.	IBM/TAPE	BP [V]	T_2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks
83																
11863	2.7.82	23.03	?	ON	ON	ON	7,7	21.08	6299.31	IBM	0.9	43,%			17,3	Run Summary lost.
11864	3.7.82	0:46	1:00	ON	ON	ON	6.45	5.05	6304.36	"		56	63	2	17.3	
11865	killed because IBM was down															
11866	3.7.82	1:19	1:33	ON	ON	ON	5.65	4.33	6308.69	IBM	0.47	57	61	3	17.3	
11867	"	2:14		ON	ON	ON	7.36	6.69	6315.38	IBM	0.76				17.3	Run Summary lost
11868	"	2:34		"	"	"	7.66	24.94	6340.32	"	0.75	59	329	14	"	
11869	"	3:26	4:20	"	"	"	5.93	18.90	6359.22	"	0.7	58	271	6	"	
11870	nonsense															
11871	7.7.82	6.29	6:35	ON	ON	ON	8.59	2.98	6362.20	IBM	0.72	55	38	0	17.3	Myut down
11872	"	7:01	8:05	ON	ON	ON	6.68	25.31	6387.51	"	0.7	59	337	13	"	
11873	"	8:06	8:45	"	"	"	5.17	15.66	6403.17	"	0.54	62	191	9	"	beams dumped
11874	"	9:30	9:35							"	0.9					NORD 10 hang up
11875	"	9:42	9:51	"	"	"	8.47	4.25	6407.42	"	0.8	64	45	2	"	" "
11876	"			"	"	"					0.6				"	"
11877	"	9:54	10:41	"	"	"	7.76	26.98	6434.40	"	0.6	63%	322	11	"	
11878	"	10:51	11:20				7.58	12.07	6446.47		0.58					NORD hang on LEVEL 14
11879	"	11:29	12:39	ON	ON	ON	4.37	18.24	6464.71	"	0.50	61	256	8	"	
11880	"	12:39	13:04	ON	ON	ON	4.12	5.98	6470.69	"	0.40	57	63	1	"	beams ~~lost~~ dumped
11881	"															
11882	"	15:58	16:04	"	"	"	6.11	1.67	6472.36	"		63	27	1	"	DL8 problems.
11883	4.7.82	2.01	2.34	"	"	"	4.83	8.58	6480.92	"	0.72	60	424	4	"	Poor beam conditions High ΣT from FWD μ
11884	"	2.57	2.58	"	"	"	2.29	0.03	6480.95	"	0.7	54	8	1	"	Short run. due to TV problem.
11885	"	3.00	3.21	"	"	"	3.97	5.06	6486.01	"	0.58	60	52	2	"	
11886	"	3.21	3.27	"	"	"	3.98	1.23	6487.24	"		62	13	0	"	~~TV~~ TV screen problem.
11887	"	3.28	3.47	"	"	"	4.38	4.9	6492.14	"	0.80	59	64	3	"	Memory parity.
11888	"	} Run summaries lost									"					Nord crash.
11889	"										"					" "
11890/11891	"															Beams dumped
11892	"	5.42	6.33	"	"	"	9.03	27,97	6520.11	"	0.86	58	309	11	"	
11893	"	6.34	6.42	"	"	"	8,15	3.34	6523.83	"	0.65	59	35	2	"	TV Screen problem
11894	"	6.45	6.55	"	"	"	7.34	4.41	6527.86	"	0.62	58	62	1	"	" "
11895	"	6.57	7.03	"	"	"	6.68	2.47	6530.33	"	0.58	61	29	2	"	" "
11896	"	} Junk : NORD problem														
11897	"															

Run	Date	Start	Stop	at Run Start I+	I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E>766eV	T2 Bit 17 2T·E4·2tr.

with the help of K-people we switch off the automatic cooling and switch it to steady cooling because one relay in the automatic mode goes on and off quite frequently (~ 0.5 - 1 hr) the temperature in the counting room slowly goes down.
In this mode of operation there is no lower limit for the temperature. If it is getting too cold you may switch to automatic again.



19^40 Parts of the problems with the DL8's are solved: no timeout any longer
but:
A whole Crate (602) is missing in the mic map. reasons(?): broken connection at board cable, Crate Controller, DL8's ? We repaired everything
reasons(?): Nord-program or temperature or ?
Suggestion: wait until Nord works properly and temperature has gone down (still 20°-21°)

20^30 The NORD hang up ("ERROR 24 IN 34643 AT 2; RING VIOLATION")
was cured by following ↑ YCLRTV
the description in
"When a RT program crashes" in the Error messages section of JOAS.
Still DL8 problems.
Other experiments want to dump beams at 20^45. We have to agree.

20^50 Beams lost I.D. Trip.
Troubles with superconducting cavity "Restart at 22^00"
22^00 "Restart at 22^30"
22^30 " " " 24^00" - . Rundown Magnet!

ON/OFF N50	MIP	TOF	<L> ×10³⁰	∫Ldt Run	∫Ldt Exp.	IBM TAPE	BP [V]	T2 Rej. Ev. Fr.(%)	Bhabha	MH	Ebeam	Remarks

4.7.82.

0:00 Clarke & Kanzaki
01.42 Beams on. Beams very poor - high background. PKR try to optimise but not very successfully.
01.45 Magnet current. → 7500 A.
Red bar occassionally appears on colour TV without associated error message. - ?
02.15 ~~ID trip without any alarm~~ → "No trigger"
~~ID PK adjust~~ ; ID HV slow down.
02:40 I found new hole in EC lead glass. Since run 11877 it has twisted. → There is no signal on Nim Trig. front
03:05 High trigger rate for FWMU. Peak time is very high! (≈ 40%) Seems to have started on (run 11882) panel.
03:20 "Error 39 in 34643 ~~was~~ was printed and TV screen stopped working (but the data taking seemed to be going on). Stopped run 1886 and restart DDAS (by EXIT, ESCAPE...). It works.
03:35 Still FWMU rate is high but we decide to watch it until the next filling.

03.44 Error 38 IN 34323; MEMORY PORITY (PEA 1006; PES 25106)

4.06 Nord crashed ie STOPped. (Level 14) Protect ring 3, ⊖, Data bit 14 on.

4.30 Nord crashed " " " " "
4.35 Nord crashed " " " " "
After reloading NORD, the message "ERROR 22 AT 1244; FALSE INTERRUPT" was printed.

4.45 After typing 'DOWN' and getting message "RUN SUMMARY SAVING", NORD crashed again, same conditions as above.
4.54 Magnet current went down to 32 A (!) very rapidly and back again to 7500 A.

5.41 Run 11892 started, DT still slightly on the high side (~ 13%) but much better than previous fill.

6.35 Jet chamber trip [Jetch High Current Faulty part: 94]

6.37 Run 11893 terminated - Nord fault. { Trig Counts 1461 917 917 915 }
Error 39 in 34643; Memory out of range (PEA: 64242; PES: 65104)
6.53 Run 11894 terminated. The same TV screen problem. (ERROR 39 in 34643; Memory out of range)
~~7~~:02 " 11895 " "
But this time when we try to restart new run, we get the message. "ERROR 13 in 34323 at 72222".
And cannot start data-taking. Restore IBM. → O.K.

Run	Date	Start	Stop	at Run Start I^+	at Run Start I^-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	To rej. $\times 10^6$	T_1 Acc. Sum.	T_2 Acc. Sum	T_1 Bit 2 $E_1 > 6$GeV	T_2 Bit 17 2T·E₄·2tr.
11898	4/7/82	7 19	7 20	7.66	7.79	13.1	41	133	11	1.4	30	79	12	20
11899	"		Run summary lost.											
11900	"	8 [illegible]	8 [illegible]	6.8	6.9	8.0	2990	5869	777	625	2639	6578	785	1287
11901	"		10 [illegible]			12.4		1368						
11902	"	10 [illegible]	10 [illegible]	9.8	10.3	13.6	452	1219	101	16.0	558	1277	158	310
11903	"	10 [illegible]		9.4	9.1	10.9		5891						
11904	"	11 [illegible]	11 [illegible]	6.1	8.6	9.5	1495	3338	389	37.1	1499	3924	443	873
11905	"	11 [illegible]		7.5	7.4	9.7		7078						
11906	"	12 [illegible]	12 [illegible]	6.4	6.8	7.8	332	687	85	6.7	319	776	102	163
11907	"	12 [illegible]	13 [illegible]	6.2	6.6	8.9	402	764	105	9.3	340	859	98	247
11908	"	14 [illegible]	14 [illegible]	9.5	10.6	10.6	73	214	18.8	2.0	80	198	18	238
11909	"	14 [illegible]	14 [illegible]	9.31	9.43	10.2	1283	3051	334	34	1310	3451	355	863
11910	"	14 [illegible]	14 [illegible]	8.19	9.13	9.3	262	564	68	6.3	242	658	82	150
11911	"	14 [illegible]	15 [illegible]	8.1	9.3	10.5	2576	5109	671	70	2301	5853	739	1164
11912	"	15 [illegible]		— No Run summary not available. —										
11914	"	18 54		8.17	9.46	10.2	14×60=	1801		No Run summary available.				
11915	"	19 15						1010						
11916	"	1931	20 34	7.31	8.55	8.4	3791	8002	987	82.9	3667	8641	1141	1904
11917	"	2036	2059	5.75	6.86	7.5	1362	~~8170~~ 2551	354	26.6	1147	2882	316	608
11918-11932	Abortive attempts to take data. See pp 88, 89.													
11933	"	22 46	23 01	8.03	9.25	10.8	953	2487	248	26.8	1144	2711	313	630
11934	"	23 39	0 06	9.48	11.01	10.6	1484	3770	386	40.8	1700	4050	478	1043
11935	57.82	0 42	1 34	10.17	10.51	11.9	3180	8002	827	98.4	3664	8636	1025	2186
11936	"	1 35	1 43	8.15	8.54	9.6	454	1062	118	11.3	487	1175	136	281
11937	"	2 40	3 23	11.02	10.53	13.9	2581	8002	671	97.2	3583	8379	857	2301
11938	"	3 23	3 34	9.09	8.71	13.8	608	1835	157	21.8	867	1914	193	500
11939	"	3 37	4 26	8.67	8.31	11.7	2903	8002	755	88.1	3656	8549	874	2047
11940	"	4 26	4 42	7.51	7.20	9.8	852	2048	221	21.7	959	2191	230	464
11941	"	4 44	5 40	7.17	6.87	9.5	2418	5429	629	59.5	2488	5889	591	1135
11942	"	6.15	7.54	10.88	10.44	10.8	3187	8002	829	89.5	3684	8666	981	1992
11943	"	7.54	7.55	7.57	7.37	12.1	45	141	11	1.4	67	111	19	31
11944	"	7 52	8 06	7.51	7.29	11.9	567	1477	147	17.5	693	1678	169	426
11945	"	08.09	08.15	7.16	6.97	3115	315	769	81.8	9.42	338	872	87	209
11946	"	08.16	08.53	6.97	6.79	9.1	2214	4832	576	51.2	2173	5459	608	1150

ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp.	IBM/TAPE	BP [V]	T_2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks
ON	OFF	OFF	6.38	0.26	6530.59	IBM		1	1	0	17.300	Short run. MIPROC OFF!
							0.50					NORD crashed.
ON	ON	ON	5.17	15.46	65 46.05	"	0.48	58	169	5	"	beams dumped
ON	ON	ON	9.53	3.73	6549.78	"	0.85					NORD hangs on LEVEL 14
ON	ON	ON	8.39	3.74	6553.57	"	0.8	59	46	0	"	Trigger box problem
ON	ON	ON	7.80	16.68	6570.25	"	0.75				"	NORD hang on LEVEL 14
ON	ON	ON	6.65	9.94	6580.19	"	0.70	60	127	2	"	YCLRTV crash
ON	OFF	ON	5.88	20.64	6600.83		0.65				"	NORD on Level 14
ON	ON	ON	4.87	1.62	6602.45	"		58	18	1	"	YCLRTV crash
ON	ON	ON	7.76	1.91	6604.36	"		58	29	0	"	beams dumped
ON	ON	ON	6.60	0.48	6604.84	"	0.80	54	7	0	"	Stopped because of YMAGNE problem.
ON	ON	ON	6.40	8.21	6613.05	"	0.80	59	89	4	"	Run terminated by NORD
ON	ON	ON	6.27	1.64	6614.69	"	0.75	61	18	1	"	Stopped because of TV problem
ON	ON	ON	6.04	15.55	6630.24	"	0.70	59	188	6	"	YCLRTV crash
ON	ON	ON				"	0.60					NORD hang on Level 14
				?	Neglect the contributions from these runs	"	0.7		Stopped level 14			New fixing ready ~1800
				?		"						
ON	ON	ON	6.71	25.45	6655.69	IBM	0.6	57	352	9	17.3	
ON	ON	ON	~~6.24~~ 6.20	~~7.20~~ 5.45	6666 14	"	0.5	59	91	5	"	NORD trouble. Beam dumped
ON	ON	ON	6.88	6.55	6670.69	"		59	95	3	"	Beams lost
ON	ON	ON	7.97	11.83	6682.52	"		58	139	10	"	Beams lost
ON	ON	ON	8.29	26.35	6708.87	IBM	.8	58	344	11	"	
"	"	"	7.35	3.34	6712.21	"	.7	59	46	2	"	beams lost
"	"	"	7.99	20.61	6732.82	IBM	.85	60	283	10	"	
"	"	"	7.30	4.44	6737.26	"	.9	62	60	0	"	Nord hang
"	"	"	6.48	18.80	6756.06	"	.95	60	236	15	"	
"	"	"	6.21	5.29	6761.35	"	.75	60	177	2	"	Nord hang
"	"	"	5.39	13.02	6774.38	"	.75	60	142	3	"	beams dumped
"	"	"	7.41	23.62	6798.00	IBM	.8	60	316	9	"	
"	"	"	7.04	0.32	6798.32	"	.7	58	5	0	"	Nord hang error 39
"	"	"	6.71	3.81	6802.13	"	.8	63	44	2	"	"
"	"	"	5.63	1.77	6803.90	"	.75	61	21	1	"	Nord hang error 39,
"	"	"	5.58	12.35	6816.25	"	0.7	60	154	6	"	beams dumped.

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E>766eV	T2 Bit 17 2T·E4·2tr.

7^{20} Just after starting Run 11898 we noticed. MIPROCS were OFF. Stopped it and started new run.
7^{58} NORD crashed. Level 14 ; RING PROTECT 3 , ⊖ DATA bit 14 ON

8^{00} Elsen Heinzelmann
8^{30} Found compressor 1 for air conditioning off. Opened valve to 25 and switched it on again. Works
10^{30} "No triggers" – status 3 stop run.
11^{15} NORD on LEVEL 14, Restart
11^{40} YCLRTV crash after memory out of range
11^{50} Trigger box problem. Status 2.99 (recipe for status 3 on Krebsbuch note helps after a few seconds)
12^{47} NORD on LEVEL 14, reload
12^{52} Memory out of range, only violation after < 1500 events, YCLRTV stops. Start RT-DAS again. Run summary lost with comment YRUNSM saved summary file (D-F) RUNSM-05:SYMB error 18.
14^{18} Run 11908 has 3=0 written on all events though magnet was at nominal value.
Rebuilt YM4GNE, YPARA.
14^{50} Rebuilt YCLRTV
15^{25} Rebuilt YCLRTV
15^{32} Timeout branch 6,1. switching crate off and on (and kicking each one) cures this for the time
15^{50} Nord on Level 14,
the error correction procedure in the lower memory crate was permanently disabled
and the ND-MEMORY test program would not even start. This could be changed only
by power off and on which had to be followed by the standard memory initialization procedure.
⇒ Hopefully this removes some of the problems.
⇒ board 1145C (memory error log) has been exchanged on the lower memory crate;
apparently the initialize command (MPM program) disabled the error correction via this board. D.C.
run 11913 lost, does not exist on IBM

16^{00} ~ 24^{00} Murphy & Yamada on shift
19^{10} Nord hung –level 14 –
20^{40} no μ-bits displayed in the front view. TV screen keeps EVENT DISPLAY ...
21^{00} NORD hung up.
But STOP worked.
EXIT, ESC ..... LOG. → NORD 50 reload
→ WAIT IBM LINK after Run start.
(F1) was tried a few times. Each time NORD didn't proceed further than
WAIT IBM LINK.
NORD 10B reloaded. still WAIT IBM LINK.
Called D. Cords for suggestion.

ON/OFF N50	MIP	TOF	<L> ×10³⁰	SLdt Run	SLdt Exp.	IBM TAPE	BP [V]	T2 Rej. Ev. Fr.(%)	Bhabha	MH	Ebeam	Remarks

(F10) IBM-COM & MAIL.
- KILL IBM Channel. ← WAIT IBM LINK disappeared.
- IBM ATTENTION. ← "JDAS": showed up.

This all started in run 11917. The TV stopped changing at 2179 events to IBM, but the run summary says 2551.

11926 "WAITING FOR IBM LINK". Run didn't go further
Ask IBM operater if on line job's running. → It was ok. But situation is same.
Tried to write on a tape: → Run stopped by itself after a few trigges.

7^{30} Rebuild operating system and data acquisition software,
but I suppose that a hardware error is lurking somewhere. D.C.

23^{30} New filling ready

5,7.82 Kobayashi + Hesse
1^{30} Old histograms ok
1^{45} during filling, the magnet decided to make a small trip 7500 → 0 → 7500
2^{10} same as 1^{45} (this time 7500 – 0 – 7700 – 7500, last step by hand!)
3^{30} Run Nord beeps Error 39 in 34647, memory out of range (YCLRTV)
EXIT and reload JDAS works.
4^{30} ID-trip (anode current)
4^{40} Nord beep, same as before
5^{20} beams dumped
5^{25} magnet goes on his usual trip. Is there any connection with Petra beeing refilled or whatever? We had up to now 3 magnet trips, all during refilling periods!
6^{25} Magnet trip with faults(!), looks like pumps off. Call K. Fast valve was closed.
7^{10} Magnet up again
7^{50} Nord error 39
8^{00} The people of the Kältetechnik are working on the air conditioning
0800 Boel, Hellenbrand on shift, Run 11946 in progress.
08.45 Mark I requests new file at 08.50. We agree.
08.49 Dump beams.

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	T0 rej. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 Bit 2 E1>6GeV	T2 Bit 17 2T·E4·2tr.	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	∫Ldt Run	∫Ldt Exp.	IBM/TAPE	BP [V]	T2 Rej. Ev Fr.(%)	Bhabha	MH	Ebeam	Remarks
90																											91
11947	5/7/82	10:26	11:20	9.00	9.36	11.8	3247	8002	845	99.7	3526	9512	995	2475	ON	ON	ON	8.15	26.45	6842.70	IBM	0.6	60	308	7	17.300	Runs after this run for magnet investigations
11948	"	11:48	11:59	6.78	7.17	8.6	531	1105	139	11.8	494	1183	154	284	"	"	"	6.63	3.52	6846.22	"	0.6	57	48	2	"	
11949	"	11.59	12:04	6.53	6.92	8.8	89	201	23.1	20.2	75	212	22	225	"	"	"	6.81	0.61	6846.83	"	0.6	57	4	0	"	IBM problem stopped run.
11950	"	12:05	12:25	6.39	6.77	8.8	1140	1883	247	55.7	868	2123	232	439	"	"	"	5.57	6.35	6853.18	"	0.6	58	72	3	"	" " " "
11951	"	12:27	12:34	6.00	6.38	7.5	426	822	111	8.4	366	889	114	198	"	"	"	6.06	2.58	6855.76	"	0.55	55	34	2	"	beams dumped
11952	5/7/82	13:41	14:33	10.42	10.77	12.6	3147	8002	819	103.5	3568	9375	1091	2501	ON	ON	ON	9.12	28.70	6884.46	IBM	0.85	59	348	12	17.300	
11953	"	14:34	14:41	8.48	8.86	9.5	397	922	103	9.9	401	1041	126	257	"	"	"	8.49	3.37	6887.83	IBM	0.75	57	38	2	"	accidentally stopped
11954	"	14:44	15:35	8.20	8.56	9.6	3036	6605	790	75.6	2934	7943	892	1969	"	"	"	7.75	23.54	6911.37	"	0.7	59	274	70	"	COLAR TV hang up
11955	"	15:36	15:39					24											0.02	6911.39	"	0.55	79	1	/	"	
11956	"	15:43	16:30	6.8	7.2	7.9	2828	5306	736	585	2321	6480	707	1402	ON	ON	ON	6.31	17.85	6929.24	"	0.5	59	205	5	17.300	dumped
11957	"	no events		due	to	timeout problems															"	0.9				"	
11958	"	20.13	20.24	9.0	9.0	18.3	638	2277	166	30.3	543	1607	156	380	ON	ON	ON	6.25	3.99	6933.23	"	0.8	1	48	1	"	junk data because of missing branch
11959	"	20.58	21.31	7.9	7.9	8.3	1943	3595	506	41.9	1574	4346	488	911	"	"	"	6.22	12.09	6945.32	"	0.55	59	132	5	"	
11960	"	21.34	22.30	7.1	7.1	7.1	3310	5615	861	60.7	2524	6759	765	1260	"	"	"	5.32	17.62	6962.94	"	0.4	60	207	7	"	dumped
11961	6-7-82	23-12	00·11	10.44	9.90	10.2	3537	8002	919	93.3	3546	9128	1108	2150	ON	ON	ON	7.59	26.84	6989.78	"	0.9	58	324	16	17.30	
11962	"	00-12	01-06	8.43	8.07	9.9	3277	6611	852	84.6	2908	8032	936	2000	"	"	"	6.86	22.48	7012.26	"	0.7	59	287	7	"	Hard hangs.
11963	"	1,08	2.00	6.23	5.94	7.7	3109	5738	809	62.1	2634	6637	830	1873	"	"	"	6.25	19.43	7031.69	"	0.6	59	227	8	"	Dump.
11964	"	2.50	3.04	10.58	9.78	(28.2)	857	1701	193	62.9	734	2038	214	~~1875~~ 544	"	"	"	6.44	5.52	7037.21	"	0.9	61	65	7	"	stopped by no triggers, status 3
11965	"	3.05	3.55	10.53	9.74	10.9	2978	7191	774	84.6	3076	8717	928	2188	"	"	"	7.67	22.85	7060.06	"	0.85	60	286	5	"	Magnet Trip - Beams lost.
11966	"	6.49	8.00	11.2	9.4	11.2	3779	8002	984	110.3	3511	9212	1120	2196	ON	ON	ON	7.56	28.59	7088.65	IBM	0,65	57	355	10	17.300	
11967	"	8.00	9.09	7.1	8.6	11.8	3897	6920	1015	119.4	3161	7954	942	1555	"	"	"	5.98	23.29	7111.94	"	0.61	58	277	7	"	
11968	"	10:12	11:00	10.39	9.95	11.0	2821	6749	735	81.1	3015	7838	956	2009	"	"	"	8.12	22.90	7134.84	IBM	0.84	59	313	7	17.300	
11969	"	12.14	13:33	6.84	6.64	7.0	4594	7583	1197	843	3463	8784	1072	1583	"	"	"	5.52	25.37	7160.21	"	0.55	58	304	4	"	dumped
11970	"	15:14	15 27	8.40	10.00	11.3	764	2181	199	225	740	1889	232	0	ON	ON	ON	7.41	5.66	7165.87	IBM	0,17	60	67	3	17.300	
11971	"	15:37	16:31	7.83	9.80	10.3	2643	7279	688	71	2384	6309	733	1400	"	"	"	7.26	19.18	7185.05	"	0.65	58	238	4	"	Color TV problem.
11972	"	16,33	17.24	6.63	8.47	9.7	3021	8002	786	76	2559	6842	780	1430	"	"	"	6.07	18.34	7203.39	"	0.60	59	242	6	"	Beams lost.
~~11974~~	"	16.04	~ 16.18					1826							"	"	"					0,75				"	NORD crash
11975	"	20.19	20.57	9.06	9.75	13.3	2288	8002	595	103	2451	6281	711	1843	"	"	"	7.39	16.92	7220.57	"	0.74	60	202	5	"	
11976	"	~~20.52~~						5323													"	0.72				"	NORD crash.
11977	"	21.28	22.01	7.28	7.92	11.4	1952	5945	508	58	1854	5205	526	1295	"	"	"	6.63	12.94	7233.51	"	0.69	59	165	4	"	Beams lost
11978	"	22.47	23:31	10.54	10.20	13.6	2609	8002	679	106	2506	6776	780	1806	"	"	"	7.45	17.40	7252.95	"	0.83	58	244	13	"	
11979	"	23:31	0:23	8.89	8.67	10.0	3069	8002	798	80	2679	7188	843	1603	"	"	"	7.27	22.31	7275.26	"	0.67	58	262	4	"	
11980	7.7.82	00 24	01·29	7.60	7.38	8.0	3923	7570	1020	81.8	3200	8137	1040	1604	"	"	"	6.49	25.48	7300.74	"	0.5	58	282	13	"	beams dumped.
																						0.85	~~0.55~~				
*11973	6.7.82	17.24	17.25	5.78	7.53	14.9	43	233	11	1.6	62	128	17	48	"	"	"	6.00	0.26	7203.65	"	0.6	51	8	0	"	

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 Bit 2 E₁ 766eV	T2 Bit 17 2T·E₄·2tr.

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8:50 – During Pitha injection when Pitha magnets were at ~0 one magnet went to 0, then went up again.
Pilot is informed, he will investigate the problem. W.B.

9:00 current error concerning Colour TV, Lords cured

10:25 started RUN 11947

10:42 Trigger box hang-up Status 3. combined with timeout in LG ADC's.

11:16 Pilots here again. Inform PKR that we have to switch off magnet.
Lend of run 11947. Magnet + H.V. run down.

11:41 Magnet work finished. Start run 11948

11:25 ERROR 24 YHDISP crashed, reinstalled

11:58 μ-chamber timout, then no triggers ~~start~~ status 3. After normal recipe, run doesn't restart. Stop run 11948, then realise there has been an ID slow-ans. Try to switch on ID, + get alarm: HV input. Reset in rucksack.
Start run 11949. After 200 events, IBM error. Wait 5 mins – stop run to mount tape.
Then IBM comes up again.

12:05 Start run 11950. Beams to be dumped at 12:10!

12:10 Synchrotron problem. Dump beams.
Drop of H.V errors MFR 56. Values 5→10 V low. Beats resets.

12:17 IBM tranfs error. Phone IBM – they are working on link.... for 2 mins they say.

12:19 IBM link back – continue run 11950.

12:21 More IBM troubles. Stop run 11950.
IBM says its OK. so start run 11951

13.00 Noticed that FWMU counts High voltage was fluctuating. So I changed back to the old supply. Please watch high voltage messages, let me know errors.
You have to switch on manually the lowest crate. B. Narosha

13:44 Mus fill. Start run 11952. Another NORD memory board has been changed to try to cure colour display problems

14:18 Trigger box hang-up status 3.

14.30 FW counter 1, PM 2 was not stand its nominal voltage of 2450 Volts any more, so I lowered it to 2200 Volts.

14.41 Accidental termination of run 11953 + running down of volts. B. Narosha caught red-handed, despite making reassuring noises like 'Don't worry ... just an HV click!'

ON/OFF N50	MIP	TOF	<L> ×10³⁰	SLdt Run	SLdt Exp.	IBM TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

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14:48 Start run 11954.

15:34 ERROR 39 IN 34643; MEMORY OUT OF RANGE
+ COLOR TV hang up,
started a new RUN 11955, did not help
EXIT, ESC and so on helped

15:46 RUN 11956 started

16.00 Nozaki, Meier

17.43 Just after starting a new run we got a timeout in crate #1 in branch #6. We tried the following things:
- knocking LAM-Grader, Crate-Controller, all cables, DL8's
- exchanging LAM-Grader (which is useless according to ROH)
- exchanging Crate-Controller
- exchanging ~~Cat~~ Branch cable (short one)
- pulling out one DL8 after the other
but nothing helps. We called Meier

19.42 Magnet current went down, same alarm LED configuration as last night (→ probably 'Schnellschlußventil' has closed). We called K-group.

19.51 Magnet fixed

20.16 μ-crates 9, 13, 1 missing, reset → o.k.

20.20 ~~Exchanged one DL8~~ After starting run 11958 we found out, that branch 6 is completely missing from wire 1176 on. (The timeouts have been cured by exchanging one DL8 in crate #1 of Branch #6).
→ Run 11958 stopped.

20ᵘʰ Wo ist die Hammer für die Elektronik ??, on the shelf, ~~the~~ above the NORD terminals at the wall.
I exchanged, re-exchanged, cried, hammered etc.... and last parts of my nerves

20.57 Finally run 11959 seems to run without errors. But we really don't know what we did during the last 3 hours.

21.31 Lineprinter message: Error 39 in 34643; memory out of range
data taking stopped, nothing worked, but stopping the run was still possible. After reloading 20AS run 11960 runs normally.

22.24 standard histograms checked.

22.36 magnet again went up and down by itself

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E₁₇₆GeV	T2 Bit 17 2T·E₄·2tr.

ON/OFF N50	MIP	TOF	<L> ×10³⁰	ΣLdt Run	ΣLdt Exp.	IBM TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

6 JUL. 0000. Olsson, Duerdoth.

0106 Memory out of range. – Error 39 34643 PEA 7220, PES 51000, Stop Run.
0207 Refill. Magnet went on a current saving tour to 0, up to 7500 again. Happened just after dump and with 0 current in machine.
0304 No triggers, status I. Start new run helps
0355 Beams lost – I.D. trip & Magnet goes down also. – PKR says: the PETRA trip was caused by our Magnet

We can't reset the Magnet Trip – Someone from K group in coming.

PKR and K people here. It seems that a Wotans condition has occurred, preventing Freigabe for PKR and causing dump of beam. PKR doesn't understand it. Should not happen. K people claim we have lost ~1 m³ of water in Magnet cooling system. There is no water alarm and no leak to be seen, unless 1m³ of water always evaporated. They will now fill it up again and see what happens.
PKR: It seems that the temperature and alarms of Magnet are connected to Wotans. This means, Petra cannot run until our magnet is in order again.

On the magnet control is "computer on", but normally it should be off. Why?

We have water again, but cannot see them.
5⁴⁴ When leak close to pump of heat shield found, it is being repaired.
6⁰⁰ Magnet up again, but Petra has difficulties to inject now.
6⁵⁵ Petra filled again.
6⁵³ Silent ID alarm. PKR was optimizing without warning. Told off sharply.

0800 MATSUMURA Schmidtmann
8:30 Status & trigger boxes up
8:50 Discovered magnet current read time between PKR and SADE to trace the spurious magnet fluctuations (magnet goes to 0 preferably during PETRA injection)
10:00 Memory out of Range Run stopped
15:20 timeout branch 6 crate 1 I.D. trig 3
15:10 Reset tagging HVs to new values (Mark II).

1340. Magnet Current
Petra Energy 18.000 7515 → 7503
18 " 7516 → 7503
10000 7489 → 7502
Servo regulated Magnet current
Program Magnet was underway

1535 IDAS Error 44 Branch 2 Crate 1 Time out DMA Run stopped
Restart o.k.

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16:00 Clarke & Kanzaki
16:30 "Error 39 in 34643; Memory out of range. PEA: 7220; PES; 51000"
This message is printed on the printer and Color TV stops working but the data taking continues. Restart 2DAS.
16:45 Time out Br 6 Cr 1 : ID ring 3 > π. Once.
17:24 Beams lost.
Magnet went down again, this time the current rose to ~8000A ! on DVM – potentially very dangerous.
20.00 ID tripped when switching power supply on. Magnet & HV input. But the magnet current is OK!
Reset them and we could switch it on.
20.06 ID trip. Anode current and HV output. 11974
20.16 Nord crash Level 14 Bit 14 (after 1826 IBM events) Protect ring 3. Paging. ⑦ ON.
21.26 " " " " 5373 Run 11976 " " " "
22:05 ID trip. Anode current and HV output.
Beams lost.
Ran magnet down to 200A prior to injection cycle – did not trip this time.

Message from W Bartel

* Pillat will arrive early (~7am) to work on magnet – he may require the whole day – please return the key to the magnet hut to him.

Beams do not look very good – BP current "oscillating" & occasionally very high dead time.

7/7/82
0000 Ball & Warming on shift
0330 There is a spike in the muon histogs and in the muon timing maps, Austin is investigating the problem – caused by noisy preamp in chamber 554. Fixed at expense of z information for this chamber.
Run 11980 in progress Histograms for 11979 look OK, other than above problem.
01:29 Dump beams. This time we ran magnet down to 1000A during PETRA pre-injection magnet cycle. Our magnet was under computer control during the whole cycle from 17.3 → 6.988. Ran up to 7500A again during injection + before ramping. No problems.
02:05 New fill ready. Start run 11981 Protect ring 3 lamp & paging lamp are on.
02:40 NORD crash. Level 14. reloaded. Beams lost. This time switch auto/remote/manual switch in power house from auto → manual → auto. No magnet fluctuations during refilling.
03:40 New fill ready. Start run 11982. – get error 22 at 1245 lev 12. code 0 on printer. nevertheless, all looks OK.
03:59 Trigger box hang-up. Level 3. + HG ADC timout.

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E_T 6 GeV	T2 Bit 17 2T·E4·2tr.

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04:18 NORD crash level 14. reloaded. Need to restart JDAS twice before anything appears on colour TV prog. mag 3 + purging tapes on.
04:26 start run 11983. This time error 22 at 1244.
04:47 Error 39 in 34643. mem. out of range. PEA 64242 PES 5304
YCLR1V then: " 7220 " 51000
— combined with a blink of the TV screen, at which all scaler numbers were lost.
Data-taking appeared to continue without any change in TV numbers. Stop run 11983 — normal run sum.
Reload ZDAS. Start run 11984.
06:01 New fill at 6:20 agreed.
06:19 Dump beams. Watched magnet current during PETRA magnet cycling. At one point, it fell to 7440A, at which I switched computer 'off' on mag. cont. box in trigger room. Current climbed again to 7500A. Switched immediately back to comp. Current stayed stable for rest of cycle. Might have been a 'normal' fluctuation.
07:03 New fill ready. Start run 11986.
07:08 TASSO has exceptionally high background. All other expts OK.
07:08 identical fault to that at 04:47 (exc. PES 65304). restart ZDAS.
07:12 Start run 11987.
Hole in JETC wire map: bins 384 → 400. YSPY complaining about V34's for DL8 49.
07:22 ID trip. reset OK. ↑ 6V fuse was broken, fuse replaced, it's working OK now!
07:52 Magnet trip — accidental by Pellat. Work now starting on tracing magnet fault.
Stop run. HV off.
8⁰⁰ Duerdoth + Hence waiting for the magnet
9⁵⁰ I emptied the Nord-10 memory log (had some entries but not full) and rebuilt the whole system. Also added ~~no~~ 2 histograms (849) to STP on Beate's request. Hein
11⁰⁰ Message from Pellat: They measure a short circuit inside the transformer. They have to open it and look inside. So most probably no magnet before the evening (even that would be lucky!)
15:00 Bell + Bartel on shift.
16,50 FWD μ HV = 2450±1 V
17 15 ~ = 2450±1 V
19:00 ~ = 2450 +1 −2 V
21 00 ~ 2450 ±1 V
23:30 ~ 2450 ±1 V

Thursday 8th July 1982

00:00 M'Cann on shift.

ON/OFF N50	MIP	TOF	<L> ×10³⁰	SLdt Run	SLdt Exp.	IBM TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

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02:15 FWD μ HV = 2450 ± 1 V.

4:00 Odaka on shift, taking over McCann.
:50 FWD μ HV = 2450 ± 1 V
08⁰⁰ Duerdoth. — another baby sitting shift! Fwd μ HV = 2450 V.
Maybe Magnet Supply will be repaired for this afternoon
14⁴⁰ — NORD crashes — reload. — Terminal was dead. I think this was something to do with the muev test run on the 1Hz clock I had going. I then paused and changed to 50Hz, then tried to go back again and then it crashed ("hung") — not on any particular level
14³⁰ Magnet Supply is repaired — start taking data again.
15¹⁵ Getting JDAS ERROR 44 B6, C1. Stop run to change DL8.
Run 11989 is short + has dead crate 15⁴⁰ Beams Dumped.

1600. Bartel + Mirowa
Magnet ok now however now we have DL8/CAMAC — problems.
20.26. Beams lost, at same time Leadglass HV-Powersupply
End caps failed because of Overcurrent. Gave: Switched Off-On
20:55 We found a broken CAM-grader which caused the DL8/CAMAC-problems
21:40 HV-Powersupplies of LG (Barrel 7,9,10,2,4) overcurrent. — reset.
21:45 First run after 1½ days started.
However: big holes in the TD wire map
at least 2 DL8's missing
Run 11990 has missing wires
I think we found Hein's hammer for the electronics.
Note: A magic touch is better than any hammer.
~~Lo~~ By touching the DL8's they came only half back to life
Hillenbrand exchanges one DL8.

TRIGGER HARDWARE STATUS
LAST UPDATE: KREMBIEL, 6/JULY/82

SYMBOL: EC1[4] = LOWEST THRESHOLD OF ENDCAP 1
T-COL[3] = TOF COLLINEARITY OF WIDTH +- 3
<6T = LESS THAN 6 TOF FIRED, (INPUT SIGNAL: >=6TOF ANTI)

LEAD GLASS THRESHOLDS

E,B	1	6 GEV
	2	2.5
	3	2.0
	4	1.5
EC	1	4 GEV
	2	1
	3	0.5
	4	0.3
EG		0.080 GEV
EQ		0.050
ES		0.150

T1 ACCEPT

BIT	COND.	BIT	COND.
1	LUM1	9	EC1[2] * EC2[2]
2	EC[1]	10	(EC1+EC2)[3] * B[4]
3	TAGG * EC[3]	11	TAGG * B[4]
4	FWMU(COPL+-1) * EQ(COLLIN)	12	BC[2]
		13	EC1[4]*EC2[4]*E[2]
		14	SEPT1 * (1T
		16	RANDOM CA 0.01 HZ

OTHER BITS NOT USED AT THE MOMENT

T1 POSTPONE

BIT	COND.	T2-COND.	BIT	COND.	T2-COND.
17	2T * B[4]	) 2TR-ALL	25	1TBG * B[4]	) 1TR-FST
18	NOT USED		26	TAGG * 1TBG	)
19	(E1+EC2)[2]*2T OFF!		27	NOT USED	
20	2TBG-NS * <7T	) 2TR-ALL	28	NOT USED	
21	NOT USED		29	T-COL[3] * <5T	)
22	NOT USED		30	T-COL[3] * <7T	) TR-FST-COL
23	NOT USED		31	TBG-COL[2]	)
24	FWMU[5] * (3TR-ID+1MU-TR-FCR)		32	NOT USED	

Run	Date	Start	Stop	at Run Start I_+	at Run Start I_-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	T_0 rej. $\times 10^6$	T_1 Acc. Sum.	T_2 Acc. Sum	T_1 Bit 2 $E_1 > 6$ GeV	T_2 Bit 17 $2T_0 \cdot E_4 \cdot 2T_7$
98 11981	7/7/82	2:04	2:33	11.15	10.44	11.6		3867						
11982	"	03:42	04:18	11.19	11.19	12.6		5026						
11983	"	04:26	04:47	9.12	9.12	9.9	1192	2734	310	30.7	1206	3196	361	796
11984	"	04:54	06:03	8.31	8.31	8.0	4161	8002	1081	86.3	3594	9357	1154	2004
11985	"	06:04	06:19	6.79	6.76	7.3	890	1648	231	16.9	770	1769	230	353
11986	"	07:03	07:10	11.03	10.86	12.4	383	986	99.8	12.3	419	1089	110	314
11987	"	07:12	07:50	10.49	10.36	10.9	1725	4201	449	48.9	1836	4934	570	1305
11988	8/7/82	14.35	15.18	7.24	7.38	13.5	2308	5438	601	81.4	2448	5831	656	1424
11990	"	21.40	21.56	7.70	7.00	21.2	939	1863	244	51.6	736	1995	217	424
11991	"	22:09	22:14	7.08	6.43	8.4	258	534	67	5.7	242	602	61	136
11992	"	no	output			due	to Nord	hang	up		good	run	with	
11993	"	23:33	23:47	5.68	5.12	6.7	773	1281	201	15.5	549	1500	168	261
11994	"	23:56	0:20	5.40	4.86	6.2	1458	2214	378	23	972	2588	286	417
11995	9.7.82	3:30	3:47	7.81	7.12	8.5	970	1919	252	21.5	842	2291	229	517
11996	"	4:19	5:01	6.92	6.29	7.1	2495	4424	649	46	1994	5128	546	984
11997	"	5:46	6:39	8.67	9.02	14.	3.91	8002	830	118	3566	9397 ~~584~~	927	2524
11998	"	6:41	7:37	8.63	8.99	10.5	3372	8002	877	92	3490	9423	959	2365
11999	"	7.38	8.30	7.26	7.61	8.81	3126	6384	813	71	742	7701	827	17.80
12000	"	12^{15}	12^{28}	10.75	10.82	13.1	853	2385	222	29	1091	2646	293	750
12001	"	12.31	1253	9.31	9.45	14.1	1312	3850	341	48	293	4420	448	1118
12002	"	12.54	1255	9.29	9.43	30.8	24	66	6.4	19	4.4	64	4	17
12003	"	1300	1349	9.1	9.26	12.2	2952	8002	768	93	674	9215	948	2308
12004	"	1350	1402	7.76	7.93	11.2	678	1765	~~780~~ 776	19.8	156	1943	218	461
12005			Run	summary	lost	in	Nord	hang	up.					
12006	"	1500	1506	8.88	8.13	10.6	324	783	84	8.9	75	929	96	223
12007	"	1507	1601	8.69	7.95	10.9	3234	8002	841	91.7	3496	9164	1038	2065
12008	"	1602	1642	9.41	6.77	9.0	2407	5166	626	56	2286	6079	687	1258
12009	"	1646	1717	6.54	5.98	8.0	1897	3603	488	38	1590	4339	551	873
12010	"	18.49	18:49								NO DATA			
12011	9/7/82	20.47	21:17	10.68	10.93	11.8	6520	3933	386	45.5	1767	4488	501	947
12012	"	21:24	21:32	8.38	7.63	5.5	449	638	116	6.3	263	18	73	82
12013	"	22:30	23:29	11.06	11.01	10.9	3229	8002	840	91	3538	9517	976	1864
12014	"	23:29	23:56	7.37	6.95	24.9	1564	3351	406	101	1457	4031	439	801
12015	4	23:57	0:58	5.69	5.34	7.9	3527	7155	930	23	3288	8110	1003	1393

ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> $\times 10^{30}$	SLdt Run	SLdt Exp.	IBM/TAPE	BP [V]	T_2 Rej. Evts fraction	# Bhabha	# MH	E_{beam}	Remarks 99
ON	ON	ON	7.48	12.15	7312.89	IBM	0.85				17.300	Nord hang up, beams lost
"	"	"	8.12	16.70	7329.59	"	0.85				17.300	NORD crash. run cont. lost.
"	"	"	7.85	9.35	7338.94	"	0.75	58	111	1	17.3	NORD crash (XCLRTV)
"	"	"	6.94	28.88	7367.82	"	0.65	58	338	14	"	
"	"	"	6.03	5.37	7373.19	"	0.5	56	85	5	"	beams dumped.
"	"	"	8.51	3.26	7376.45	"	0.9	58	37	1	"	
"	"	"	7.72	13.31	7389.76	"	0.85	59	174	7	"	magnet trip. OFF for 31 Runs.
ON	ON	ON	6.60	15.24	7405.00	"	0.7	58	221	4	"	stop to change DL8, the beams down
"	"	"	5.88	5.52	7410,52	"	.5	50	72	3	"	Stop to change DL8 up to 4 minutes DL8!!
"	"	"	6.18	1.58	7412.11	"	.5	58	21	0	"	DL8-problems
4045	events											
"	"	"	4.75	3.67	7415,78	"	.4	57	44	1	"	Stop due to Nord
"	"	"	4.28	6.22	7422,00	"		57	75	2	"	Nord hang up
"	"	"	5.79	5.61	7427.61	"	.6	60	74	4	"	magnet down
"	"	"	5.36	13.36	7440.97	"	.5	58	156	7	"	
"	"	"	6.96	22.20	7463.17	"	0.85	61	285	8	"	
"	"	"	7.02	23.68	7486.85	"	0.7	59	301	8	"	
"	"	"	6.15	14.22	7506.07	"	0.55	62	220	7	"	Beams dumped.
ON	ON	ON	8.24	7.02	7513.09	"	0.8	61	88	2	"	Stopped since screen didn't refresh.
"	"	"	9.26	12.14	7525.23	"	0.25	68	126	2	"	ZDAS crash
"	"	"	5.88	0.14	7525.37	"	0.72	47	1	0	"	" "
"	"	"	8.1	23.92	7549.29	"	0.72	64	289	7	"	
"	"	"	7.69	5.21	7556.5	"	0.66	62	67	2	"	Beams lost
							0.9					
"	"	"	6.72	2.18	7556.68	"	0.8	61	221	0	"	Nord hang up
"	"	"	7.13	23.04	7579.72	"	0.7	59	279	13	"	
"	"	"	6.37	15.33	8595.05	"	0.6	59	187	10	"	Memory out of range.
"	"	"	5.55	10.41	7605.46	"	0.5	58	143	7	"	Beams lost.
							0.53					Power glitch, beams most of beam lost during injection lost.
ON	ON	ON	7.82	11.62	7617.08	IBM	0.84	60	139	3	17.300	NORD hang up / problem.
"	"	"	2.48	1.11	7618.19	"	—	58	10	0	"	beams dumped.
"	"	"	6.78	21.88	7640.07	"	0.84	60	280	8	17.300	
"	"	"	5.83	9.11	7649.18	"	0.55	58	104	0	"	TV frozen
"	"	"	5.96	21.34	7670.52	"	0.48	58	222	6	"	

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	T0 rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E1.76GeV	T2 Bit 17 2T·E4·2tr.

100 8.7.82

Run 11991 3 DL8's missing – CAMAC-problems
22:40 After the exchange of another DL8 and moving some cables the wire map looks ok
23:00 Histograms for run 11992 ok
23:30 Run 11992 no out put due to Nord hang up restart Nord
23:45 NORD-trouble: memory out of range ŸCLRTV-program. Restore ŸCLRTV according to prescription in JDAS-folder
Synchrotron is down so we keep the fill as long as possible

9.7.82

Schneekloth + Heintzelmann
0:38 NORD crash memory out of range ŸCLRTV. Short after also beam dumps.
1:30 Few minutes before new fill Magnet trip: call K-people. A lot of fuses broken
3:30 Magnet ok again. Start ramp
3:47 Magnet trip. Call K-people
4:19 Magnet ok.
5:00 Beams dumped. PETRA wants our magnet down for filling. Go to 100 Amp.
6:20 No triggers arrive and readout error 44 branch 3 crate 2 µ-chambers
pause/continue then HP16 out of sequence 44=1 and data taking continues
6:39 Big success: we ended a run normally

8:00 Yamada + Bell (last ever shift on JADE) on shift.
8:14 Mark J propse new filling at 8.30.
8:30 Beams dumped.
9:31 "SHORT BREAK" appears. They seem to have trouble filling the positron beams.
10:30 "UNTERBRECHUNG BIS 11:00". Magnet turned down to 2500 A after PHR said O.K.
11:45 magnet current raised to 7600 A.
Injection started ~11:35
12:05 New fill ready
12:30 NORD50 reloaded by EXIT, ESC-sequence (during the run 12000 IV stopped being refreshed).
It works ok after reload.
~~14:30 New fill ready~~
~~14:50 NORD crash~~

ON/OFF N50	MIP	TOF	<L> ×10³⁰	SLdt Run	SLdt Exp.	IBM/TAPE	BP [V]	T2 Rej. Ev. Fr.(%)	Bhabha	MH	Ebeam	Remarks

9/7/82

101

12:57 ŸCLRTV crashed. Also JDAS found to be corrupt. Reloaded.
14:30 New fill ready
14:50 NORD hangs up 'OUT OF RANGE' (MEMORY). Reloaded NORD but no colour TV. Tried to scan run. Same message FALSE INTERRUPT, IDENT CONFLICT' on printer.
~~Reloaded NORD~~ Problem solved by method b) on TV screen.

16:00 Glendinning & Takeda on shift
16:05 TAG-HV error message on TTY. The differences between the actual values and the nominal values are ≈ 5 V. Mr. Bell suggests that we can ignore them for the time being.
16:35 Again TAG-HV error.
16:40 Memory out of range. } PEA 7220 . PES 51000
error 39. in 34643.
Data taking continues but TV-screen is not up-dated.
16:45 exit from JDAS and then restart it (didn't reload NORD) → runs OK now.

This holds from 8. July (Yesterday) noon:
To cure the Status 3 - hangups the following measures were taken.
Reduction of Ring 2 - T2 - Latch - Gate-width such as to be just safe for all hits from the beam to be accepted.
Pushing later the T2 question pulse. ~~But after~~ Since we do not want to ~~lose~~ lose 1 bunch X after T2 reject, we had to reduce the deadtime after Fast Clear. In case of T2 reject, the LeCroy TDC's are restarted from the next bunch X 1.5 µsec after Fast Clear, which is just the limit given in LeCroy's manual.
Status 3 - hangups should no longer occur, or else only 1/3 days.

17:17 Beams lost.
18:50 The lights dimmed for a second, the beam was lost and the NORD hung. → POWER FAILURE.

I have examined two dumps of crashed RT programs without much conclusive evidence. Here I keep finding that JDAS is corrupt - a SHOW-CONFIGURE or CONF lists the titles ok but the numbers under neath are rubbish. Re building JDAS works.
21:11 "Error 39 in 34643; Memmory out of range
PEA: 64242; PES 11304 "
Then immediately (1 second) again
PEA: 7220; PES: 51000 this time {still error 39}
Screen frozen but data taking seems to go on.

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E₁ 76 GeV	T2 Bit 17 2T·E₄·2tr.

21:16 Pluto phone - say their background is high - ours is OK (0.65 V)

21:17 Notice that there is nothing registering on the front panel of the NORD10, which Howard set up to count disc errors.

21:19 Tried ~~to~~ restarting JDAS to see if it would cure it, but noticed that under the message "11 Tasks + 2 buffers" (or whatever it is) was:

AVAIL : 131177223269315361407453 {spaces} 049954559)

which certainly looks wrong!

hence tried restarting the NORD too, but still got same thing.

21:23 seconds after trying to start a run anyway we got on the printer :-

"error 22 at 1244 ; false interrupt

" level (dec.) : 12 ; Ident code (oct.) : 0 "

21:31 beams dumped. Phoned Hugh M^c Conn to enquire whereabouts of Howard - no luck but Hugh suggests rebuilding YCLRTV, as described in "what to know about JDAS"

21:42 Noted that ~~the~~ 34643 means the error was in YCLRTV !!!

tried to rebuild but mode file bombed out - last few lines were as follows :-

```
*WR-SEG 124,,
    124  66000  121777  3257  0  1  ,  RFW demand
*EXIT

3
ILL. COMMAND
 *** Batch job aborted ***
@
```

Actually it was OK. Just macro wasn't updated when extra task introduced HE17

21:50 "Kurze Unterbrechung" appears on screen - just as well!

22:00 can't contact H. Mills or D. Cords, tried reloading NORD, then immediately rebuilding YCLRTV, still same error as above

22:06 Phone P. Dittmann, he says ~~that~~ after the EXIT that, YCLRTV is rebuilt anyway so should be OK — he's on shift at midnight anyway.

22:07 start up JDAS and still get strange number string.

22:30 Immediately after start of new Run get on line printer :-

error 22 at 1244; false interrupt

level 12; ident 0

ON/OFF N50	MIP	TOF	<L> ×10³⁰	SLdt Run	SLdt Exp.	IBM TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

23:13 Muon crate 12 has been missing frequently for last 3/4 hour or so but can't see anything obviously wrong (IE)

23:50 Trigger box hang up - the usual - "Serious error in question pulse sequence". - reset according to prescription.

23:51 TV screen freezes again. Same old memory ~~out~~ out of range error "39 at 34643" FEA 64244 ; PES 15104.

reached 3275 events to IBM - may be significant since it seemed to get about this far last time.

23:57 Restart JDAS (3351) ~~+~~ had reached this far when we restarted - it was refreshed on screen then.

10.7.82 Dittmann, Wiebrock

1.30 YCLRTV dead again, rebuild ZDAS + YCLRTV

Memory Errors log emptied: all errors in ~~CR~~ Memory crate 1 slot 3

Exchange memory card *

2.00 DL8 Timeout, since branch 6, crate 4, 1 DL8, we do the usual rubber business; change cards crate 0, 1 slot 1, 3; no help

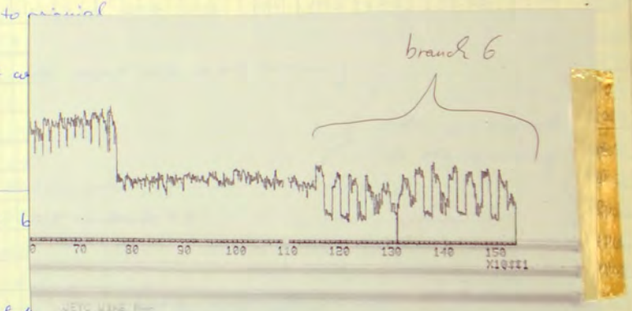
3.00 * did not help. Everything changed back to original

5.00 Muon crate 7 off, no power, wait a

5.30 Trigger box hangup, status "3".

7.30 T3 output problem

Since 3.00 no computer hang-up (2 6



8.00 Hellenbrand, Kobayashi

8.25 timeouts 30 ... 40, branch 6 crate 4 (first DL8

8.30 We called Rowe to cure MUON problems. He

that 30A fuse was blown up but also the case of

8.52 Beams dumped.

YSPY detected error, DL8 150, 176, 186 no respons

order of wires 1152 ... 1167, 1152 ... 1167, 1184 ... 1199, 1184 ... 1199, 1216 ... 1231, and so on

in RUN 12025 and 12026

we traced back the problem to system crate, then phoned Cords

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E₁ 76 GeV	T2 Bit 17 2T·E₄·2tr.

 9/7/82

21:16 Pluto phone - say their background is high - ours is OK (0.65 V)

21:17 Notice that there is nothing registering on the front panel of the NORD10, which Howard set up to count disc errors.

21:19 Tried ~~to~~ restarting JDAS to see if it would cure it, but noticed that under the message "11 Tasks + 2 buffers" (or whatever it is) was:

AVAIL : 131177223269315361407453 {spaces} 049954559)

which certainly looks wrong!
hence tried restarting the NORD too, but still got same thing.

21:23 seconds after trying to start a run anyway we got on the printer :-
"error 22 at 12444 ; false interrupt"
" level (dec.) : 12 ; Ident code (oct.) : 0 "

21:31 beams dumped. Phoned Hugh M^c Conn to enquire whereabouts of Howard - no luck but Hugh suggests rebuilding YCLRTV, as described in "what to know about JDAS"

21:42 Noted that ~~address~~ 34643 means the error was in YCLRTV !!!
tried to rebuild but mode file bombed out - last few lines were as follows :-

```
*WR-SEG 124,,
    124  66000  121777  3257  0  1  ,  RFW demand
*EXIT

3
ILL. COMMAND
 *** Batch job aborted ***
@
```

Actually it was OK. Just macro wasn't updated when extra task introduced HE17

21:50 "Kurze Unterbrechung" appears on screen - just as well!

22:00 can't contact H. Mills or D. Cords, tried reloading NORD, then immediately rebuilding YCLRTV, still same error as above

22:06 Phone P. Dittmann, he says ~~that~~ after the EXIT that, YCLRTV is rebuilt anyway so should be OK — he's on shift at midnight anyway.

22:07 start up JDAS and still get strange number string.

22:30 Immediately after start of new Runs get on line printer :-
error 22 at 12444; false interrupt
level 12; ident 0

Run	Date	Start	Stop	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	SLdt Run	SLdt Exp.	IBM TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

9/7/82

23:13 Muon crate 12 has been missing frequently for last 3/4 hour or so but can't see anything obviously wrong (IL7)

23:50 Trigger box hang up - the usual - "Serious error in question pulse sequence". - reset according to prescription.

23:51 TV screen freezes again. Same old memory out of range error "39 at 34643"
PEA 642144 ; PES 15104.

reached 3275 events to IBM - may be significant since it seemed to get about this far last time.

23:57 Restart JDAS (3351) ~~+~~ had reached this far when we restarted - it was refreshed on screen then.

10.7.82 Dittmann, Wiedbrock

1.30 YCLRTV dead again, rebuild ZDAS + YCLRTV
Memory Errors log emptied: all errors in ~~CR~~ Memory crate 1 slot 3
Exchange memory card. *

2.00 DL8 Timeout, sites branch 6, crate 4, 1. DL8, we do the usual rubbles business
change cards crate 0, 1 slot 1,3; no help

3.00 * did not help. Everything changed back to original.

5.00 Muon crate 7 off, no power, wait with expert call until morning

5.30 Trigger box hangup, status "3".

7.30 T3 output problem
Since 3.00 no computer hang-up (? bad contacts ?)

call μ-expert in the morning

8.00 Hellenbrand, Kobayashi

8.25 timeouts 30 ... 40, branch 6 crate 4 (first DL8 nr. 765), cured by itself after 5 min.

8.50 We called Rowe to cure MUON problems. He suggested to check fuses of Crate 7. We found not on that 30A fuse was blown up but also the case of the fuse was burnt. We replaced them, then it's all right

8.52 Beams dumped.
YSPY detected error, DL8 150, 776, 786 no respons
order of wires 1152 ... 1167, 1152 ... 1167, 1184 ... 1199, 1184 ... 1199, 1216 ... 1231, and so on
in RVN 12025 and 12026
we traced back the problem to system crate, then phoned Cords

Run	Date	Start	Stop	at Run Start I_+	at Run Start I_-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	To rej. $\times 10^6$	T_1 Acc. Sum.	T_2 Acc Sum	T_1 Bit 2 $E_1 > 6$GeV	T_2 Bit 17 $2T \cdot E_4 \cdot 2tr.$
12016	10.7.82	1:49	1:57	10.37	10.46	62,7	423	744	122	77	305	813	26	209
12017	"	2:04	2:41	0.00	0.00	14,9	2169	6520	564	83	2917	7323	801	1680
12018	"	3:19	4:11	8.48	7.42	11.3	30	8002	803	90	3661	9197	987	1822
12019	"	4:12	5:07	8.38	6.40	10.4	3332	8002	862	84	3621	9312	996	1649
12020	"	5:08	5:58	6.54	5.63	12.4	2990	6147	777	96	2822	2139	856	1267
12021	"	6:26	7:17	~~8.81~~ 10:17	~~8.44~~ 10:23	11.5	3083	8002	802	92	3496	9516	1009	2131
12022	"	7:19	8:16	8.76	8.40	9.9	3420	8002	890	88.5	3687	9085	1149	1802
12023	"	8:16	8:20	~~7.46~~	~~7.73~~	~~20.4~~ 13.5	~~1487~~ 425	427	50	10.8	182	418	56	80
12024	"	8:26	8:51	7.76	6.74	9.6	1487	2987	386	37.2	1392	3427	448	595
12025	"	9:20	9:59	11.27	11.36	14.1	2319	8002	603	85.1	2881	7387	833	1792
12026	"	10:00	10:06	9.67	9.93	16.0	360	1457	93	14.9	455	1182	142	294
12027	"	no data		miproc		was	not	loaded						
12028	"	14:16	14:19					692						
12029	"	no data												
12030	"	14:47	14:52					787						
12031	"	14:54	15:26	9.13	8.48	8.9	1933	4213	502	44.6	1878	4777	599	943
12032–12033		no data												
12034	10.7.82	19:47	20:37	9.03	9.31	12.5	2997	8002	780	97.4	3704	8835	1064	1681
12035	"	20:38	21:38	7.72	7.99	10.3	3576	8002	931	96.1	3545	9238	1028	1665
12036	"	21:38	22:11	6.47	6.75	7.6	1969	3745	513	37.1	1717	4345	550	700
12037	"	22:42	23:02	11.32	11.13	14.4	1159	3745	302	43.4	1700	4012	422	952
12038	11.7.82	23:32	0:19	11.18	11.14	12.6	2812	8002	732	92.6	3480	9190	1027	2428
12039	"	0:19	~~0:27~~	9.41	9.46	13.8	433	1161	112	15.5	496	1285	139	309
12040	"	0:56	1:01	11.20	11.30	15.3	255	893	66	10.2	377	928	116	297
12041	"	1:10	1:54	10.59	10.72	13.4	2623	7589	682	91.3	3343	8903	938	2549
12042	"	1:57	2:11	8.90	9.05	12.9	~~2793~~	2120	206	26.6	921	2637	274	726
12043	"	2:17	2:45	8.37	8.57	11.9	1642	3864	428	50.7	1658	4739	501	1248
12044	"	2:46	3:21	7.67	7.81	12.5	2073	8002	539	61.3	2025	5570	646	6016
12045	"	3:23	3:59	6.88	7.01	9.0	2107	4616	549	49.6	2125	5361	637	1076
12046	"	4:23	5:11	11.20	11.30	13.4	2849	8002	741	99.0	3460	9595	1021	2715
12047	"	5:12	5:35					3600						
12048	"	5:40	6:39	8.4	8.7	9.8	3525	8002	917	89.5	3650	9180	1128	2110
12049	"	6:40	7:22	7.01	7.23	8.3	2410	4914	627	51.9	2204	5642	711	1211
12050	"	7:24	7:30	6.22	6.43	9.5	364	684	95	9.0	280	841	90	171

ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> $\times 10^{30}$	SLdt Run	SLdt Exp.	IBM/TAPE	BP [V]	T_2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks
ON	ON	ON	4.28	2.02	7622.54	IBM	0.7	69	22	0	17.3	
"	"	"	8.31	18.03	7690.02	"	0.7	59	241	10	12.3	
"	"	"	6.70	20.66	7710.73	"	0.65	61	263	11	12.3	
"	"	"	5.81	19.32	7730.10	"	0.52	60	223	6	12.3	
"	"	"	4.71	14.09	7744.19	"	0.57	60	162	2	12.3	
"	"	"	2.30	22.50	7766.60	"	0.65	60*	262	8	12.3	
on	on	on	6.79	23.21	7789.81	"	0.55	59	282	10	17.300	
"	"	"	5.81	1.13	7790.94	"	/	52	13	0	"	DL8 problems
"	"	"	5.52	8.21	7799.15	"	/	60	97	4	"	Beams dumped.
ON	ON	ON	8.22	19.06	7818.21	"	0.7	39	262	5	17.300	
"	"	"	8.06	2.90	7820.11	"	0.6	25	36	/	"	no runs for 4 hours
			4.12	0.73	7820.84	"			15	0		} timeouts
												} colour TV hang up
			6.69	2.27	7823.11	"						
ON	ON	ON	6.59	12.74	7835.85	"		58	169	5	17.300	
ON	ON	ON	7.20	21.58	7857.43	IBM	0.8	60%	267	9	17.300	
"	"	"	6.51	23.28	7880.71	"	0.7	59	273	7	"	
"	"	"	5.84	11.51	7892.22	"	0.5	59	144	4	"	beams dumped
"	"	"	9.15	10.61	7902.83	"	0.98	61	132	3	"	beams lost
"	"	"	8.79	24.73	7927.56	"		59	304	14	"	
"	"	"	7.75	3.36	7930.92	"	0.67	57	37	1	"	beams lost
"	"	"	8.64	2.20	7933.12	"	0.85	58	33	6	"	
"	"	"	8.77	23.01	7956.13	"	0.75	60	246	8	"	Color TV hang up.
"	"	"	7.91	6.27	7962.40	"	0.68	60	78	3	"	" "
"	"	"	6.88	11.30	7973.70	"		60	124	4	"	
OFF	OFF	OFF	6.61	13.71	7987.41	"	0.53	0	164	7	"	without μ-P's
ON	ON	ON	6.21	13.09	8000.50	"	6.60	60	173	3	"	beams dumped.
"	"	"	8.04	22.91	8023.41	"	0.82	61	289	7	"	
"	"	"		^10.	8033.41	"	0.69				"	word hang on LEVEL 14
ON	ON	ON	6.99	24.64	8058.05	"	0.60	~~59~~ 58	303	12	"	
"	"	"	6.14	14.81	8072.86	"	~~0.47~~	58	173	7	"	Color TV hang up.
"	"	"	5.56	2.02	8074.88	"	0.47	58	27	0	"	beams dumped.

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E₁ 76 GeV	T2 Bit 17 2T·E₄·2tr.

10.7.82

14⁰⁰ branch coupler 6 exchanged D.C.
14:10 wire map looks o.k. now RUN 12028
14:26 again time out branch 6 crate 4, 1. DL8, DL8 exchanged
temperatures: hall: 29.5°C / behind V34: 36°C / ~~software~~ hardware 21°C
phoned Schaal (Helmut). He said, when compressors run at full power, he can't do anything else.
15:25 RUN 12031 since event 3000 DL8 123 (wires 984-991) missing in wire map
15:25 temperature in hardware room still 21°C
we switched off some camac crates (LG) to reduce heat generation
we stopped data taking
15:40 switched off camac DL8
15:45 temperature hardware 20°C
16:00 Narodka & Warming on shift
magnet current lowered to 1000 A
16.40 temperature 18.5° switch on LG and μ-crates
17.10 " switch on DL8/2
17.30 17.2° switch on read, beams dumped, test run ok.
Magnet up to 7500
Start testrun, time-out branch 6, crate 4,
crate off → ok.
Exchange CCcontr + Lamgrade of crates 4/5
Test run runs successfully, let stream
18.15 Petra "short break" (Sender ausfall) Temp. 18.2°.
18.40 Get twice mem. out of range! Color TV hangs, data acqu. contin.
19.30 Computer stopped on level 14.
3 DL8's missing, Hellenbrand and Warning exchanging.
1 BG (35) missing, I found all cables and it works again.
DL8's ok, start run 12034
~~from time to time~~ from time to time time outs branch 6 crate 4
branch 2 crate 5
21 18 no triggers, trigger box hang up, level 3,
24.00 temp 18.5°.

ON/OFF N50	MIP	TOF	<L> ×10³⁰	∫Ldt Run	∫Ldt Exp.	IBM TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

11.7.82

0:00 Elsen and Kanzaki
0:25 I.D. trip because of beam loss.
0:50 New fill ready.
1:00 Timeout branch 2 crate 1; DMA errors. Stop run and start new one → ZDAS error 56 ?
TOF banks wrong length. Try again (Fortran run time error - see printout on console), Try again → okay
1:55 Color TV hangs up with the message "ERROR 39 IN 34643; -- " on the printer.
Rebuild YCLRTV. PEA 64242 PES 65104
2:12 Color TV hang up, again. Rebuilt ZDAS, YCLRTV
2:45 IBM Link error "and" color TV hang up ....
Link problem ~~was~~ cured only by "re-linking".
Restart ZDAS.
3:10 With this start of ZDAS, μ-P's did not come up. So this run (12045) is without any reduction.
4:00 Beams dumped.
5:35 Mord hangs on level 14
7:20 Color TV hang up with IBM link error. Restart ZDAS.
7:30 Beams dumped.
7:50 ~~Petra ready~~ New filling ready
8:00 Glendinning, Olsson
8:11 IBM transfer error - restarted ok, but screen was frozen again. Restarted ZDAS.
8:30 Computer room, standard repair doesn't work. Same error as on p. 102. Rebuilding ZDAS ...
Rebuilding ends with III. command, batch job aborted (?!). It seems to work.
screen froze and printer said "error 39 in 34643" i.e. YCLRTV.
8 46 Trigger hang up, status 3
Timecard in LG ADC B2 C5 error 44 reseat this sun 8⁰⁰
9:12 Status 3, No reset possible. Start New Run.
12:29 Temp at DL8 19.8° We will switch off at 20.0°
12:39 ZDAS error 53 System crate watchdog flag on PARM = 00000 1 beam current > 10 mA Trigger rate 7 Hz
ZDAS error 47 MP-16 start pulse missing or T2 crate offline.
01 11 20.0° at DL8 stop all, Branch 4-5 cooling down
15:21 the fan in the NORD10 is making a terrible noise like a tractor! Dittmann coming, but not back for dataking
↳ broken rubber cap on fan replaced by one stolen from old N10.
16⁰⁰ W. Bartel P. Rowe
19⁰⁰ still too hot 19°C for switching on
Rebuild ZDAS, YCLRTV
19⁰⁰ Print memory error log
Error log full !!!

Run	Date	Start	Stop	at Run Start I_+	at Run Start I_-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	To rej. $\times 10^6$	T_1 Acc. Sum.	T_2 Acc. Sum	T_1 Bit 2 $E_1 > 6$ GeV	T_2 Bit 17 $2T \cdot E_4 > 2$ tr.	ON/OFF N50	MIP	TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp.	IBM/TAPE	BP [V]	T_2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks
12051	11.7.82	7:58	8:11	11.25	11.10	16.0	800	2487	208	33	1078	3043	300	913	ON	ON	ON	7.94	635	8081.23	IBM	0.89	63	85	0	17.300	colour TV hang up
12052	"	8:13	~~8:28~~	10.48	10.36	19.1	584	1890	152	29	774	2432	902	~~375~~ 816	"	"	"	6.57	3.84	8085 07	"	0.95	62	60	2	"	Edcs break down, rebuilt.
12053	"	838	9 13	8.61	8.44	18.2	2024	4639	527	96	2036	5479	585	1422	"	"	"	6.61	13.37	8098.44	"	0.7	60	151	5	"	trigger hang up, reset impossible
12054	"	9:13	10:10	8.58	8.41	10.2	3367	8002	876	89	3521	9360	1077	2302	"	"	"	7.03	23.68	8122.12	"	0.65	59	300	11	"	
12055	"	10:10	10:20	7.21	7.08	8.7	584	1282	152	13	575	1461	187	983	"	"	"	6.02	3,51	8125.63	"	0.54	58	42	2	"	Beams lost, no alarm
12056	"	12:38	13:04	10.88	10.99	17.2	1533	4887	398	68	2116	5607	561	1722	A	"	"	8.57	12.09	8138.72	"	1,1	60	178	5	"	stopped due to several time errors
12057	"	13:05	13.09	9,77	9.41	12,7	182	575	47	6	248	605	69	177	"	"	"	8,11	1,48	8140.20	"	0.76	57	17	1	"	" " " " " "
12059	12/7/82	16:07	16:21	10.55	9.60	17.2	796	2460	207	36	1034	2929	254	879	"	-	-	7.23	5.76	8145.96	-	1.0	61	74	4	"	(No run 12058)
12060	"	16:23	16:51	10.00	9.13	12.7	1644	4528	428	54	1965	5261	532	1365	"	-	-	6.69	11.00	8156.96	-	0.9	61%	133	6	"	
12061	"	16:57	17:57	8.96	8.12	10.5	3492	8002	909	95.7	3624	9343	1095	2186	"	"	"	6.30	22.00	8178.96	"	0.6	60"	270	8	"	
12062	"	17:57	19:05	7.58	6.83	8.0	4052	7989	1054	84.6	3664	9072	1250	1785	"	"	"	5.28	21.41	8200.37	"	0.45	58	262	11	"	beams lost
12063	"	19:35	19:44	1044	11.02	12.7	525	1441	136	173	616	1592	169	453	"	-	-	7.84	4.12	8204.49	"	1.0	57%	40	2	"	beams lost
12064	12/7/82	20:24	20:32	10.60	10.78	12.1	1068	2834	278	33.8	1243	3248	369	4127	on	on	on	7.93	8.47	8212.96	IBM	0.75	60	97	7	17.300	TV hang up
12065	"	20:38	20:54	9.63	9.86	12.1	955	2660	249	30.1	1192	2990	386	3764	"	"	"	7.95	7.59	8220.55	"	0.6	67	177	3	"	TV Trip
12066	– 12068	RUN	summaries	lost	or	never	existed																				
12069	12/7/82	21:49	21:50				20	78							off	off	off	4.13	0.08	8220.63	IBM			2	1	17.300	
12070	"	21:50	21:59	7.61	7.93	9.8	448	1119	117	11.4	527	1188	186	1315	on	on	on	6.58	2.95	8223.58	"	0.5	59	47	1	"	beams lost
12071	12/7/82	22:31	23:19	10.81	11.27	12.7	2889	8002	752	95.7	3467	9197	1032	2620	on	on	on	7.88	22.77	8246.35	IBM	0.7	60	251	11	17.300	
12072	13/7/82	23:20	0:15	8.8	9.4	10.6	3337	8002	868	92.2	3629	9186	1154	2316	ON	ON	ON	7.32	24.44	8270.79	"	0.6	59	319	9	"	
12073	"	00:15	00:40	7.3	7.9	9.8	?	3255	?	?	?	?	?	?	"	.	"	6.99	9.80	8280.59	"	0.5	?	?	?	"	NORD stopped
12074	"	0:50	1:16	6.6	7.2	8.5	1450	2919	377	32.1	1346	3374	437	726	"	"	"	5.99	8.68	8289.27	"	0.4	59	112	3	"	b. dumped
12075	"	3:08	3:26	11.0	11.3	12.4	1086	3076	282	34.8	1369	3305	419	835	"	"	"	9.08	9.86	8299.13	"	0.8	59	115	7	"	Color TV hang up
12076	"	3:31	3:46	9.5	9.8	12.9	886	2505	230	29.7	1168	2593	351	654	"	"	"	8.75	7.75	8306.88	"	0.75	59	96	2	"	"
12077	"	3.48	4.42	9.4	9.7	11.0	3073	8002	798	88.0	3667	8810	1080	1967	"	"	"	8.01	24.62	8331.60	"	0.7	60	304	9	"	
12078	"	4.42	5.37	7.9	8.2	8.7	3272	7185	851	74.0	3389	7675	1103	1466	"	"	"	6.84	22.37	8353.97	"	0.55	58	301	6	"	b. dumped
12079	--	08:05	08:30	10:31	11:01	12:2	1450	3975	377	46.0	1790	4297	509	1032	ON	ON	ON	8.03	11.64	8365.61	IBM	0,78	59	128	6	17.300	
12080		08:33	09:25	9.35	10.04	13.3	3023	7986	787	104	3631	8815	1003	1956	"	"	"	7.13	21.55	8387.16	IBM	0.75	61	256	10	—	IBM link failure
12081		09:26	09:32	7.90	8.58	16.3	322	880	83.6	13.6	414	890	105	199	"	"	"	6.39	2.06	8389.22	—	0,74	58	21	1	--	IBM link failure
12082		09:33	10 09	7.74	8.41	17.8	2165	4949	563	100	2287	5541	663	1177	"	"	"	5.46	11.83	8401.05	"	0.65	66.	152	7	"	~~No run~~, Colour TV Trip.
12083		10.35	11.00	6.53	7.16	9.09	1504	3308	391	354	1492	3785	458	718	"	"	"	4.64	6.98	8408.03	"	—	60%	95	3	"	Ended for ~~beam~~ new filling
12084	13/7/82	12:12	12:24	9.85	9.92	11.6	647	2026	168	19.5	791	1952	255	477	ON	ON	ON	7.50	4.85	8412.88	IBM	0.71	45%	57	2	17.300	Ended by DLS default.
12085	"	12:32	13:00	9.20	9.27	10.3	1650	4039	429	44.2	1867	4392	593	973	"	"	"	7.43	12.27	8425.15	IBM	0.65	55	157	4	17.300	Stopped IBM error 54
12086	"	13:01	13:38	8.42	8.51	16.4	1936	4175	564	82.7	1926	4606	597	1014	ON	ON	ON	5.96	11.54	8436.69	IBM	0.63	56	161	5	17.300	Ended Color TV hang up
12087	"	13:35	13:57	7.62	7.71	8.6	1272	2711	331	28.6	1250	2913	380	596	"	"	"	5.83	7.41	8444.10	IBM	0.56	60%	94	6	17.3	Ended Temp too high.

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E₁ 76 GeV	T2 Bit 17 2T·E₄·2tr.

110 11.7.82

19:45 Outside temp. 25.5 °C
14 CAMAC-crates of DL8's are off still the air condition system is not able to keep the temperature below 19°C.
The compressors downstairs are permanently on. They work at full power. Thus the capacity of the system ~~is~~ seems to small.

20:30 18.5° dump the beam
20:50 18.3° Petra has problems 'short break'. (Synchrotron)
21:15 18.0° still short break (system broken)
22:30 Restart 24^h
run magnet down
23:35 Switch on DL8's, Petra is injecting

12/7/82

0^00 Matsumura & Takeda on shift
> JDAS READOUT ERROR 53 - System crate watchdog flag on PARM = ØØØØØØ (oct)
run terminated
Reloading does not help at all.
Called Diffmann.

2^00 System crate watchdog flag comes on with the first event only. This kills YPARA.
Camac test programs don't show this error. Programs without YPARA run normally with error 53 only at the first event. Rebuilding ZMONX does not help. Switching System crates power on/off does not help.

4^30 I cannot solve the problem. I have commented out in YPARA the "first" event. But now I get other CAMAC errors LG Br 5 G2 Timeout with 77700₈ and DL8 Timeouts with 77610 B. Hopeless!

→ To D.C. I have changed (DAS) YPARA in order to get around the first event. Please take the "C's" out, if things work again

6 statements commented out

YPARA
L ~540

```
      IF(IBITS(IFE,0,NN=120
      DO 15 K=1,NN
      CALL HOLD(12,1)
      IF(IFLAG .EQ.-1) GOTO 20
      IF(IFLAG .GT.10) GOTO 7600
   15 CONTINUE
      GOTO 7500
C20   CALL ZGET(JTASK,JBUFR,LIST,1000,L)
C
C CHECK TRIGGER NIM-AND-OR
C
C     IF(IBIT(LIST(32),6) .NE. 0) GOTO 7779
C     IF(IBIT(LIST(32),7) .NE.0 ) GOTO 7779
C
C START PEDESTAL LOOP
C
      DO 40 IEV=1,IPADFL
      CALL HOLD(15,1)
```

5^00 We have reached now 100% inefficiency. I hope everything gets repaired until noon when we will switch off because of overtemperature.

ON/OFF N50	MIP	TOF	<L> ×10³⁰	SLdt Run	SLdt Exp.	IBM TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

12/7/82 111

0^00 > Cords & DC Darvill on shift.
11:30 K-people where here to inspect the air condition system. No defects were found. We are just at the limit of the capacity of the system.
We installed a sprinkler on the roof of the counting house.

12/7/82
16:00 Barlow + Hellenbrand
Branch Coupler 7 has been exchanged. D.C.
Cords and Diffmann did a final test.
When it worked, they quickly left the counting room.

NO data for 27 hours

16:06 RUN 12059 started
16:20 YSPY error - Trigger bit 3 lost. Console message "memory out of range". Colour TV not updated
Stop run. Start run 12060
16:50 Muon Camac crate problems - Timeout, and then NORD thinks it is offline. Starting new run cures it.
17:25 Muon crate problem recurs. Cured by pause — continue.
19:34 Neo fill
19:44 Beams Lost.
19:35 temperature in hardware room was below 19°C all the day.
Great success of the new installed sprinkler.
Sprinkler switched off at 19:35
20:20 wire 1178 was missed since run 12059.
Could only be repaired by exchanging one DL8 (16 147)
20:32 ERROR 39 in 34643 memory out of range RUN 12064 stopped
EXIT/ESC/RT/2/RT 7DAS/LOG RUN 12065 started
20:54 Trip 0 of colour TV (RING VIOLATION / FILE SYSTEM ERROR)
changed Mob-file to build YCLRTV
tried to start RUN, got message MEMRYAREA=7799 SHOULD BE920 MSIZE= 0
RUN number was increased, colour TV reseted but not further updated
EXIT and so on RUN ~~12067 stop~~ number increased (12067), but colour TV not updated
same error message
could not reach Cords or Diffmann
reloaded V10 started RUN without writing data
data were taken (examined histogrammes) but colour TV black
EXIT ... now colour TV comes back
21:24 started RUN 12068
after 398 events V10 hang up (level 14)

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E=7.6GeV	T2 Bit 17 2T·E=4·2tr.

12/7/82 phoned Howard Mills - Came in @21:45. Noted that numbers under CONF all bunched again. Rebuilt ZDAS. All sprang into life
RUN 12069 started, MIPROC and TOF did not turn to on after pedestal events
Howard turned on MIPROC
RUN 12070 started after 1120 events beams lost

It would seem that YCLRTV dies with memory range or Ring Violation and that ZDAS is destroyed somewhere in the FIOLIB. Cures - as advised by the SADE witchdoctor (who has as little a clue as the real ones)

YCLRTV - Rebuild via method described in book (RT) YDAS

ZDAS (Recognise by P20 or F16 The numbers are all at Hole left)
1 Rebuild by MO_(DAS)ADAS999 when logged on as RT
2 Then RT ZDAS
3 If colour TV not on EXIT ART ZDAS again
4 Press F16 (configure)
5 If Miprocs not on (see TV) use F19AF9)
6 Pray HEH

23:19 RUN 12071 ended normally
Standard histograms of this run checked. o.k.

00⁰⁰ 13/7/82 Gelison, Maier

00⁰⁴ Muon crate 12 missing temporarily. Then 5. Then 12: (HH HH), 11: (1). Many, many missing crates!
0:30 T3 I/P for street 21, group 1 missing according to YSPY message, probably a statistical fluctuation.
00⁴⁰ NSRD stopped. Error No 4.
0:42 N10 crashed at Level 14, Protect Ring 3 → restart → reconf. → load N50 → o.k.
00⁴⁹ Run 12074 started. Muon crate 8 needed resetting in Hall. Crate 12 a frequent misser!
1⁰⁰ YSPY: Trigger 3 input, street 29, group 1.
3:09 HV-check detects ~1% deviations for ~~the~~ tagging-HV → neglected
3:29 Color-TV hangup + Lineprinter output: memory out of range
Exit + reload → o.k.

ON/OFF N50	MIP	TOF	<L> ×10³⁰	∫Ldt Run	∫Ldt Exp.	IBM TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

13/7/82.
3:46 Again Color TV hangup + 'memory out of range'
5:38 PETRA has Vacuum-leak, break for at least ½h, we set our magnet current to 1000 Amps.
7:30 Magnet back to 7500 Amps.
08:00 DC Darvill & S. Yamada on shift. + F Foster (after 10,00)
08:05 Run 12079 started
08:50 JDAS READOUT ERROR 44 - TIMEOUT Branch 2 state 1 : Latches. — stop run
08:36 Run 12080 started successfully
08:42 IBM Transfer Error (oct) 000054 Subsense (oct) 140000 error cnt (oct) 000002 — went away after retry.
09:21 IBM Transfer Error again - retry solves it -
09:41 Things seem quiet again now on the IBM front! we just had a burst of IBM errors which caused the generation ending of a couple of runs, but everything now seems fine and we just have the temperature to worry about. It is now 19°C

10:07 "No Trigger" Stop / Reset / Start cures problem.
10:09 Run 12082 terminated - "Memory out of Range" Error 39. Rebuild YCLRTV+ZDAS. Dumps show nothing obvious
Howard Mills happens to be here to rectify situation
10:30 DL-8 power supply for the crate 4-5 is replaced, since one of the fuses was loose.
10:35 Run 12083 Started.
To trace the NSRD hardware problem, the following changes to the multiport memory were made:
1) crate 1 (lower): replaced error log (1145), big MPM data (1143), memory (1132) in slot 3
old ones again
2) swapped memory boards of banks 1-3 between crates 0 and 1, to see whether the error moves. DC

Many Muon crate 12 missings (Not continuously missing but at high enough rate for message to stay almost permanently.

11 00 Run 12083 Ended for new filling. Temperature is now 19.7° + rising slowly.
11 30 Temp reaches 20.5 DL8 switched off (Left hand side only)
We make some attempt to improve insulation of the electronic room.
12 09 Temp. now down to 19.5 ∴ decide to turn on DL8 + carry on running.
12 12 Run 12084 started. Ended after a DL8 fault.
12 32 Start run 12085.

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E>7.6 GeV	T2 Bit 17 2T·E4·2tr.

ON/OFF N50	MIP	TOF	<L> ×10³⁰	∫Ldt Run	∫Ldt Exp.	IBM TAPE	BP [V]	T2 Rej. Ev. Fr.(%)	Bhabha	MH	Ebeam	Remarks

13/7/82
13:00 IBM error 54 – RUN STOP (12085)
13:01 RUN 12086 START
13:03 IBM error 54 — cont.
13:13 NO TRIGGERS – level (5) occur
13:33 YCLRTV ERROR 39 COLRTV down — Run stop (RUN 12086) NORD50 LOADED
We tried to display an event, which caused the error ??
13:35 RUN 12087 START
13 53 Temp up to 20.5° should probably stop for a min half an hour.
Run 12087 terminated – switch off DL8's. Temp stable at 20.5°
14 27 New filling of PETRA starts.
15 00 Short Break announced.
16:00 Barlow Schneekloth on shift.
16:36 DL8's switched back on – Temp. is 19°
16:40 Start run 12088. JETC warmup looks OK.
16:50 Tower errors on branch 5 crate 6. Cleared crate and they stopped (coincidence!) Temp. still 19°
17:15 Check standard histograms. There are some new spikes in the JETC axial and timing maps – maybe associated with the DL8's in branch 5 crate 3. Also spike in muon map – chambers 155, 156, 157, 158.
17:36 Start RUN 12089
check standard histograms. seem to be ok
Timeout error on branche 3 crate 2, Muonchamber, Temp. 19.5°C
17:50 Nord stops – level 14. Run 12089 had 3312 events
Terminal 9 will not respond to <ESC>, so have to master-clear.
Spike on p hit map cured by pulling out and putting back the relevant digitiser ~~etc~~ Not permanently. Digitiser replaced.
18:18 Nord stops at level 14 again. Master-clear again
19.28 ended RUN 12091 succesfully, start new RUN 12092 Temp 20°C
19.46 Tbeams dumped, DL8's switched off (left side only) Temp 20.5°C
20.28 DL8's switched on, Temp 19.5°C,
20.39 RUN 12093 started
21:19 Run stopped to allow D.C. to swap boards
21:30 Rename datafiles.
22.21 start new RUN 12095
22:28 No Triggers. Stop run + start run 12096 — OK now
22.57 ERROR, memory out of range in YCLRTV. Remake as instructed.
23.05 start new RUN

13.7.82
(No terminals respond at all. No data going through!
23⁰⁸ Nord sticks. In Looping between levels 1, 3, 13, and 14 – looping over a few (low) addresses. DMA address 400018.
Runs 2 and 3. Master-clear.
Colour TV fails to appear – exit and RT ZDAS on Howard's instructions. by phone
23⁵⁵ Nav fill.
14.7.82
00⁰⁰ MINOWA & HEDEGAARD ARRIVE
01³¹ ERROR 39 in 34643 MEMORY OUT OF RANGE YCLRTV. REMAKE AS INSTRUCTED ON P112.
NOTED THAT MUON CRATE 12 MISSING CONSISTENTLY.
03⁵⁶ ERROR 39 in 34643 MEMORY OUT OF RANGE.
05¹⁵ NORD STOPS LEVEL 14 INDICATED. MASTER CLEAR COLOUR TV FAILS TO APPEAR. AFTER STARTING A RUN (12107) EXIT AND RT ZDAS.
07⁴¹ ERROR 39 IN 34643 MEMORY OUT OF RANGE REMAKE AS INSTRUCTED.
8⁰⁰ Goddard & Schmidt-Lucanus
ERROR 39 in 34643 MEMORY OUT OF RANGE
8²⁰ IBM transfer error 54, subcrr 140000 two times
8⁵⁰ ID alarm: HV input. not able to reset it, HEUER called. Stopped run 12112
10⁴¹ Run ended to allow work on Nord memory & system regeneration HER
11¹² Beams lost
12:30 Temperature = 20° switch off DL8 except branche 6 and 7
12:45 Magnet control now incorporated into ZDAS (Detector – CNTRL (F18))
you have to set a new nominal field by F66
You change the current by F67.
The field is compared to the nominal value every minute and a message is printed if it does not agree. C.E.
15:00 190 DL8 switch power on
16:00 Olsson & Odaker
16:02 The colour TV goes memory out of range & stops. I take yet another dump. NO memory error lights on. Reload YCLRTV and all is Ok HER
16:28 The colour TV hang up again. beam loss
17:17 HV alarm on ID. Same problem as in the morning. (No, first green button forgotten!)

Run	Date	Start	Stop	at Run Start I_+	at Run Start I_-	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T_1 Acc. Sum.	T_2 Acc Sum	T_1 Bit 2 $E_1 \geq 6$ GeV	T_2 Bit 17 2T·E_4·2tr.	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	$\int L dt$ Run	$\int L dt$ Exp.	IBM/TAPE	BP [V]	T_2 Rej. Ev. Fr. (%)	Bhabha	MH	E_{beam}	Remarks
116																											117
12088	13.7.82	16.44	17.35	10.71	11.18	18.4	3083	8002	802	147	3621	8945	1135	2412	ON	ON	ON	7.23	22.28	8466.38	IBM	0.8	60	285	11	17.30	
12089	"	17.36	17:50	8.69	9.21			3312							"	"	"	7.0	9.02	8475.40	—	0.6				"	Run summary lost – had to Master Clear.
12090	"	18:02	18:18	7.89	8.40	10.1		2318							"	"	"	7.53	6.31	8481.71	"	0.6				"	
12091	"	18:23	19.28	9.37	7.87	8.7	3833	8002	997	86	3657	8909	1208	9820	"	"	"	6.09	23.36	8505.07	"	0.5	58	291	9	"	
12092	"	19.28	19.47	6.12	6.59	8.3	1034	2256	269	22	984	2358	307	2596	"	"	"	5.05	5.22	8510.29	"	0.5	54%	60	0	"	beams dumped
12093	"	20.39	21:20	10.57	10.54	13.0	2142	6319	557	72	2733	6627	879	1841	"	"	"	8.34	17.87	8528.16	"	0.8	55	289	5	"	
12094	"	21.30	22.21	8.63	8.46	11.5	3040	8002	790	91	3478	8729	1116	10189	"	"	"	6.83	20.76	8549.92	"	0.65	57	243	11	"	
12095	"	22.21	22.26	7.36	7.23	10.0	240	637	63	6	293	656	89	757	"	"	"	5.79	1.39	8551.31	"	0.65	58	27	0	"	
12096	"	22.28	23.03	7.22	7.09	26.4	2074	4303	539	142	1955	4788	553	1005	"	"	"	4.57	~~4.48~~ 0.09	8560.74	"	0.6	61	129	3	"	
12097	"	23.05	23.06	6.52	6.41			97							"	"	"		0.09	8560.88	"						Run summary lost, had to master clear
12098	"	23.22	23.31	6.24	6.13	7.4		1052	138	10	466	1106	150	219	"	"	"	5.11	2.72	8563.60		0.5	56	34	2	"	
12099	14.7.82	0.00	0.56	11.18	11.15	11.9	3263	8002	849	101	~~748~~ 3624	8908	1165	2239	"	"	"	7.35	23.99	8587.59	"	0.9	60	295	10	17.30	
12100	"	00 56	01 29	8.19	7.49	10.2	1926	3996	501	51	1817	4570	600	1029	"	"	"	6.05	11.65	8599.24	"	0.55	60	136	0	"	
12101	"	01 30	01 31	7.49	6.80	12.7	70	173	18	2.3	62	190	8	54	"	"	"	5.80	0.41	8599.65	"	0.53	56	5	0	"	HARDLY WORTH THE EFFORT.
12102	"	01 40	02 17	7.26	7.12	8.8	2144	4349	558	49	2022	5032	676	1096	"	"	"	5.79	12.42	8612.07	"	0.52	60	140	8	"	
12103	—"—	02 50	03 04	11.08	11.08	13.0	736	2140	192	25	1013	186	282	611	"	"	"	9.42	6.94	8619.01	"	0.83	~~89~~ 63	83	2	"	STOPPED AFTER MEMORY OUT OF RANGE.
12104	—"—	03 11	04 05	9.57	9.51	12.9	3209	8002	835	108	3600	8911	1058	2204	"	"	"	6.69	21.48	8640.49	"	0.73	60	244	6	"	
12105	—"—	04 05	05 03	8.11	8.01	14.4	3385	8002	881	127	3705	8760	1125	1971	"	"	"	6.37	21.55	8662.04	"	0.63	60	260	8	"	
12106	"	05 03		6.82	6.70	9.4		1465							"	"	"	6.07	3.72	8665.76	"	0.60				"	RUN SUMMARY LOST NORD TO HANG UP. LEVEL 19
12107	"	05 26	05 30	6.43	6.31	9.2	~~229~~ 229	508	59	5.5	233	582	69	111	"	"	"	5.20	1.19	8666.95	"	0.57	64	10	0	"	RUN STOPPED TO GET TV MONITOR WORKING.
12108	"	05.31	05 42	6.33	6.28	9.6	606	1357	158	15	592	1574	176	322	"	"	"	5.19	3.15	8670.10	"	0.52	60	30	2	"	Beams dumped
12109	"	06 25	07 23	11.12	10.85	11.4	3173	8002	814	92	3728	8763	1150	2187	"	"	"	7.45	23.29	8693.39	"	0.83	60	297	7	"	
12110	"	07 23	07 41	7.83	7.32	9.6	1058	2463	275	26	1118	2716	337	584	"	"	"	6.87	7.27	8700.66	"	0.59	59	87	6	"	
12111	"	07 44	8 53	7.79	7.11	9.1	2594	5352	675	61	2410	6098	768	1234	"	"	"	5.8	15.05	8715.71	"	0.57	59	181	13	"	run stopped because of ED trip.
12112	"	9 53	10 41	11.0	10.6	10.9	2885	7351	751	81	3309	8147	981	2175	"	"	"	8.32	24.00	8739.71	"	0.70	58	287	9	"	Run stopped to allow work on Nord
12113	"	15 28	16 10	10.86	10.82	13.9	2376	5977	618	86.2	2670	6920	742	1885	"	"	"	7.68	18.26	8757.97	"	0.8	61	208	9	17.3	
12114	"	16 13	16 33	9.11	9.17	12.3	1215	3045	316	39.0	1391	3331	435	817	"	"	"	7.50	9.11	8767.08	"	0.6	59	112	2	"	Beams lost.
12115	"	17 27	17 32	9.30	10	13.8	878	782	72	10	355	807	116	211	"	"	"	7.78	2.16	8769.84	"	0.65	57	31	0	"	Beams lost.
12116	"	1803	18 04	—	—	19.9	56												0.43	8768.67	"	0.75	—	3	1	"	" "
12118	"	18:38	19:30	11.13	9.45	10.5	3067	7614	758	84.1	3455	8430	1073	217	"	"	"	7.34	22.52	8792.19	"	0.65	59	261	7	"	Beams lost. §
12117	"	18:35	18:37	11.31	9.60	13.4	120	354	31.2	4.2	141	369	36	107	"	"	"	7.80	0.94	8793.13	"	?	58	12	0	"	
12119	"	20:14	21:05	11.04	10.91	11.4	3056	8002	794.7	90.5	3640	8826	1094	2357	"	"	"	8.03	24.54	8817.67	"	0.70	60	289	8	"	Flash ADCs out ↓
12120	"	21:05	22:05	8.80	8.89	9.0	3551	8002	924	84	3653	8929	1901	9058	"	"	"	6.92	24.58	8842.25	"	0.55	58	292	13	"	
12121	"	22:05	22:10	7.35	7.45	7.8	274	585	71.4	5.6	273	608	99	141	"	"	"	6.28	1.72	8843.97	"	?	56	24	0	"	terminated due to the magnet trip
12122	"	23:19	23:21	6.03	6.04	8.5	141	282	36.7	3.1	128	274	46	47	"	"	"	4.30	0.61	8844.58	"	0.5	60	7	2	"	Beams dumped

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 Bit 2 E1>6GeV	T2 Bit 17 2T·E4·2tr.

14·July·1982.

19:30 Beams lost. without PETRA knowing
"Switch on high voltage" appears with no beam in PETRA. After 30 seconds TASSO switch on! Then short break.
During Run 12118 we fixed YCLRTV in memory (Non Demand). This ran with some 'memory out of range' BUT the program kept going.
To try an idea we take the Flash ADC out of the readout for the night - this starts from Run 12119

20⁰⁰ New version of N50 program installed. New features:

- special "loose" multihadron selection according to Minowa's request.
  Selected events are marked in N50S-bank, word 12 with a 15 (integer).
  Histogram 95 (in MISCELLANEOUS) shows reject code, bin 15 shows number of selected multihadron candidates.
  The old "on-line" tight multihadron selection stays unchanged!
  Ratio of old 'tight' by new "loose" selection ~ 1/10
- new MUPAIR selection.
  ⇒ please select and copy some MUPAIRS for further study.

20:11 New Fill
22:11 The magnet current has fallen down to 0. All fuses in power supply gone, now exchanged by K-group
23:18 start new run 12122. 8320 New fill to start.

00⁰⁰ 15th July. Thursday

H. Schiemann & P Rowe on Shift.

00⁴² Standard histograms taken. OK.
Frequent µ crate 12 (ss 11) missing.
01⁰⁰ YVOLTS error (LG). Pause/continue cures it.
01 ⁵³ New Fill
01.⁵⁰ JSTS TIMEOUT ERROR 44 - TIMEOUT BRANCH 7 CRATES : I.D. RING 3

Run	Date	Start	Stop	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	SLatt Run	SLatt Exp.	IBM/TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

14.7.82

02⁴⁰ ID trip (no alarm). JETC high current. PETRA start optimising ½ hour after run start! Pause run, run up I.D. & Continue. OK now.
02⁴⁷ JSTS error 44. Timeout Br 2 Cr. 5: LG ADC's
03¹² Beams lost / I.J. Alarm
03⁴² Again PKR optimise when all is stable here. I.D. trip. Pause run.
03⁵⁵ YSPY: Trigger 3 ½p missing. Street 36, Group 3. See if it recurs.
06¹⁸ Beams lost. ID trip.

08⁰⁰ 15/7/82 Matsumura / Pearce

08¹⁰ New fill ready :- start new run, R.12129.
08³⁰ Obtained a string of 'error 39 || Memory out of range' messages on the teletype (≈ 34643). Data taking continued uninterrupted however. Left a message for Howard Mills to send us reassurance.
08²⁰ Muon crate 12 goes missing far too regularly :- about once every 30 secs. H M^cC. is not too worried but will check it out later
08⁵³ IBM error 54. Telephone IBM on 3818. They will correct the problem.
Stop run - nearly finished anyway.
Start run 12130 to tape as IBM has error.
09³² Run 12132 started. Write to IBM again.
11⁰⁰ IBM hung up again, but only for ~ 1 min.
~~Rumour has it~~. There will be a 1 hour shutdown for PETRA K.R. to make some checks on quads.
Somebody apparently asked for 5 min access in JADE - but who was it?? I wish they had told me!!.

I wish someone would organise a search for muon crate 12!

11³⁰ PKR have managed to check the quads thoroughly without the need for access - therefore the 1 hour shutdown is cancelled. However, they now want a circa 4 hours shutdown to do some repairs. It must either be now or early next week. Now seems like a good time :- the other experiments are in agreement.

11³⁷ Many TAG HV's wrong by ~5V. No action taken since we will shortly close down.
The Petra repairs will now proceed. Estimated time is 3 to 4 hours.

Run	Date	Start	Stop	at Run Start I_+	at Run Start I_-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	T_0 rej. $\times 10^6$	T_1 Acc. Sum.	T_2 Acc Sum	T_1 Bit 2 E>76GeV	T_2 Bit 17 2T·E>2tr.
120														
12123	15/7/82	00.10	00.58	11.14	11.49	12.3	2866	8002	745.8	91.9	3613	8997	1080	2531
12124	15/7/82	00 58	1.52	9.32	9.69	10.5	3183	8002	828.1	86.6	3736	8964	1220	2228
12125	15/7/82	2.23	3.12	11.25	11.45	12.9	2713	7929	705.8	91.9	3578	8921	1124	2576
12126	"	3.41	4.33	11.72	11.18	12.5	2837	8002	738	92	3530	9229	432	2620
12127	"	4.34	5.27	9.17	9.17	10.6	3199	8002	833	88	3658	9096	1159	2477
12128	"	5.28	6.17	7.73	7.75	9.3	2917	8667	759	70	3026	7637	1048	1904
12129	"	8.11		11.19	11.35	13.4	2449	6978	637	85	3171	8142	938	2421
12130	15/7/82	9.00	9.30	9.24	9.43	13.0	1779	5008	463	60	2247	6046	695	1745
12131	"	No events :- HV hang up												
12132	"	9.32	10.31	8.29	8.45	9.3	3506	8002	912	85	3701	8974	1265	2238
12133	"	10.34	11.47	6.86	7.04	10.0	4360	8002	1134	113	3813	8489	1372	1756
12134	"	11.47	12:02	5.63	5.80	6.5	824	1463	214	14	673	1536	269	295
12135	"	19^{35}	19^{35}											
12136	"	19^{40}	19^{58}	10.98	11.26	42%!	644	1338	167	71	574	1542	149	469
12137	"	20^{05}	20^{32}	9.40	10.21	12.9	1590	4640	413	538	2029	5192	572	1476
12138	"	21.01	21.55	8.35	8.65	11.0	3222	8002	838	74,6	3760	8853	1141	2023
12139	"	21.56	22.47	7.74	7.42	8.9	2993	6455	779	71	2896	7373	965	1570
12140	"	Run summary lost												
12141	"	23:57	00:51	9.86	9.71	11.0	3275	8002	852	94	3676	8927	1173	2279
12142	16/7/82	00:51	1,51	8.21	8.05	10.2	3541	8002	921	94	3800	8795	1344	1970
12143	"	1.52	1.59	6.85	6.73	11.2	403	941	105	12	424	1055	136	225
12144	"	2:30	3:18	11.12	11.12	12.5	2882	8002	750	94	3528	8937	1101	2409
12145	"	3.17	4.16	9.20	9.25	10.3	3451	8002	898	92	3642	9210	1183	2294
12146	"	4:16	5:19	7.72	7.79	8.8	3721	8002	968	85	3703	8900	1195	2021
12147	"	5:18	5:23	6.48	6.55	7.0	206	379	53.6	3.7	163	419	60	70
12148	"	5:58	6.49	11.26	11.35	18.2	2637	8002	686	125	3513	9521	967	2992
12150	"	6:53	7:46	9.23	9.29	11.1	3179	8002	828	92	3661	9072	1170	2312
12151	"	7:46	8:50	7.78	7.86	8.7	3785	8002	985	85	3672	9061	1204	1978
12152	"	8:50	9:00	6.55	6.63	8.6	565	1069	147	13	479	1216	179	249
12153	"	9:39	10:25	11.36	11.23	14.1	2717	8002	707	100	3482	9280	1053	2693
12154	"	10:25	10:40	—	—	—	—	~2500	—	—	—	—	—	—
12155	"	10:43	11:41	9.01	8.89	10.7	3214	8002	836	89	3658	8996	1174	2182
12156	"	11:41	12:31	7.47	7.40	8.9	2973	6301	774	69	2857	7255	962	1575
12157	"	13:24	13:37	10.84	10.14	13.3	759	2171	198	26	953	2482	280	746
12158	"	13:37	13:49	9.81	9.15	12.8	778	2184	203	26	980	2461	280	674
12159	"	13:52	13:59	9.59	9.30	12.2	404	1066	105	18	462	1226	153	301

ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp.	IBM/Tape	BP [V]	T_2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks
												121
ON	ON	ON	8.50	24.38	8868.96	IBM	0.6	61	288	12	17.3	
-"-	-"-	-"-	7.96	25.34	8894.30	-"-	0.55	60	328	9	17.3	
-"-	-"-	-"-	8.25	22.39	8916.69	-"-	0.80	60	295	8	17.3	Beams lost
"	"	"	7.56	2.44	8938.13	"	0.70	61	248	7	"	
"	"	"	7.35	23.50	8961.63	"	0.60	60	285	8	"	
"	"	"	6.03	17.58	8979.21	"	0.50	59	226	5	"	Beams lost.
"	"	"	8,38	20.52	8999.73	"	0,76	62%	273	7	"	Stopped when IBM error occurred.
ON	ON	ON	8.03	14.28	9019.01	F1173 IBM	0.66	61	188	5	17.300	Written to tape
												No events :- HV hang up.
ON	ON	ON	7.00	24.64	9043.65	IBM	0.52	59	318	9	17.300	
"	"	"	5.31	23.16	9066.81	IBM	0.42	57	263	8	"	
"	"	"	4.36	3.59	9070.40	"	0.40	55	51	3	"	
												Flash ADC back ↓ Run Aborted – CAMAC prob.
"	"	"	4.86	3.13	9073.53	"	0.8	62%	37	0	"	DL8 down. Some CAMAC counts
"	"	"	7.54	11.98	9085.51	"	0.6	60%	151	3	"	Magnet trip.
"	"	"	6.67	27.29	9106.80	"	0.6	61%	264	9	"	Run with normal end
"	"	"	5.66	16.94	9123.74	IBM	0.55	60%	190	5	"	~~Runs~~ New fill on general agreement
				15	9138.74	"						*~6,000 events ⇒ guess $\int Ldt$ *
"	"	"	6.77	22.16	9160.90	"		60%	264	8	"	
"	"	"	7.01	24.18	9185.08	"	0.54	59	316	17	"	
"	"	"	5.84	2.35	9187.43	"		58	76	1	"	beams dumped
"	"	"	8.10	23.35	9210.78	"		59	306	5	"	
"	"	"	6.29	21.72	9232.50	"	0.60	60	253	5	"	
"	"	"	5.99	22.27	9254.77	"	0.50	59	288	4	"	
"	"	"	5.48	1.12	9255.89	"	0.39	56	17	0	"	Beams dumped
"	"	"	7.69	20.28	9275,97	"	0.77	62	256	8	"	
"	"	"	7.54	23.98	9299.95	"	0.70	60	15	2	"	
"	"	"	5.76	21.80	9321.75	"	0.52	55	253	11	"	
"	"	"	5.06	2.08	9323.83	"	0.41	54	28	2	"	Beams dumped
"	"	"	8.11	22.05	9345.88	"	0.75	60	272	8	"	
"	"	"	—	—	—	"	0.77	—	—	—	"	NORD hang up.
"	"	"	7,57	24,32	9370.20	"	0,62	54	280	12	"	
"	"	"	5.47	16.21	9386.46	"	0.50	60	191	9	"	
"	"	"	8.88	6.74	9393.20	"	0.72	55	83	3	"	LG treshold read at 5 comb
"	"	"	8,73	6.79	9399,99	"		55	80	3	"	4
"	"	"	8,48	3.42	9403.41	"	0.65	60	40	0	"	3

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 Bit 2 E>76GeV	T2 Bit 17 2T·E>4·2tr	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	SLdt Run	SLdt Exp.	IBM TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

15/7/82

12:03 Beam dumped short break DL8 switch off Branch 6, 7 20°C
Magnet 1600 A

13³⁰ Magnet trips off. There are no diagnostics apparent in the control room – all warning lights are normal – but the magnet will not reset. Need to call K-group. No answer from K-group. I will try later.

14³⁰ Magnet operational once more.

16.00 Krehbiel on watchdog shift. & Allison

DON'T FORGET TO RAISE THE MAGNET CURRENT WHEN INJECTION BEGINS !

16.45 Rain, Donner + Blitzen, Sprinkler turned off

17.00 Raining stopped, but no sunshine → Sprinkler stays off)

17.20 Heavy rain & gale

From now on FlashADCs are back in

19¹² Magnet GO 7500 — PKR injecting

19¹⁷ Magnet at 7500 A.

19³² HT on – beam optimising.

19³⁵ Run 12136 aborted, & DL8's switched on.

19³⁶ " 12137 Timeout branch 5 crate 6 (I.D. reg 1). Switching off & on did not cure.

19⁴⁰ ID trip.

19⁴⁹ DL8 CAMAC controller taken out, contacts cleaned. All OK now.

19⁵¹ Same again !! But OK on continuing run.

19⁵⁸ YSPY discovers bad DL8. Run 12137 stopped. DL8 replaced.

20⁰⁵ Run#12137 started.

20³⁰ Magnet trip. Fault light on – no reason – could not reset – called K group. Reset ID.

~~Ignore so.~~ (~~I think the green light = Kickback < 35°C – was off. It came on as I watched. Could not reset.~~)

K-group found a door not closed properly on power supply

20⁵⁰ GO 7500. 20⁵⁹ 7500 A.

21⁰⁰ Start Run # 12138

21.17 2× "Memory out of Range" Error

21.17 Memory Parity together with IBM Transfer Error 52, Sub. 0, Cat 0. Try again Y helped.
Run 12138 MUON CRATE MISSING 12 very often, sometimes 11

22.10 Memory out of Ranges Error

22.45 Beams dumped. on general agreement for new fill. μ chambers 370 did not report singles rate.

22.58 Noise in the Hall as from a medium size spark gap firing once. ← what is it ? it happens from time to time

23²² Start run # 12140 μ crate 5 missing. Reset CAMAC unit.

23.53 Hang up level 14, Restart Nord

For the Experts: Note
"Error in Opening File..." after start of Run 12137, around 20.14

16.7.82

0.00 McCann + Narroshe

0.20 17.2 °C !

1.45 trigger hang up – STATUS 3 – also timeout crate 5, branch 2
STOP – RESET – START WORKED.

3:11 Run 12144 2× "ERROR 39 IN 34643 (YCCRTV); MEMORY OUT OF RANGE."
For no. 1 also " PEA : 64242 ; PES : 65304 "
For no. 2 also " PEA : 7220 ; PES : 51000 "

Colour TV seems to be running OK, so we just continue.

4.10 Sun starts rising 17.0° C, very quiet shift!

4.20 2× memory out of range

6:04 Run 12148 2× memory out of range. 16.8° C

6.25 Slow ID trip, Petra are doing some adjustments, BP currents unstable.

6.30 On again

6.50 ID trip. When trying to switch on HV INPUT ERROR CATIE ALWAYS.
Applied dirty trick to get ID on without calling expert.

6.55 Second hiccup of IBM links. It works again on "return".
Connected with "Memory out of range".

As a result of this trip, RUN 12149 DOES NOT EXIST (trip during pedestal events).

8⁰⁰ Matsumura, Kobayashi

9⁰⁸ Magnet fluctuation. Current went down to 7386 A. Reset to 7500 A.

10⁴⁰ NORD hang up. Restarted.

11:16 RUN 12155 paused, cause Jet chamber HV down (over current)

12:00 18.2°C

13²⁴ RUN 12157 started which LG threshold moved to 5.

13:37 12158 " 4.
12159 " 3
12160 " 4

Leadglass readout threshold test.

The threshold read out study shows that rate of spinners is still tolerable at 4 counts, but not at 3 counts. R12160 onwards has 4 counts readout. Intended for the next 48-50 hours of datataking.
Obs: Event length is hardly affected, to judge from histograms. Trigger rate is independent of threshold in the readout. There will be minor effect on LG resolution. J.O., H. Takeda

Run	Date	Start	Stop	at Run Start I_+	at Run Start I_-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	Tϕ rej. $\times 10^6$	T_1 Acc. Sum.	T_2 Acc. Sum	T_1 Bit 2 E$_{1+2}$ 6GeV	T_2 Bit 17 2T·E$_{4+2}$tr
124														
12160	16.7.82	13:59	15:01	9.53	9.37	10.9	3193	8002	830	90.6	3694	8755	1195	2166
12161	"	15:02	15:56	2.71	7.58	8.7	3260	7053	848	74.0	3324	7557	1152	1642
12162	"	16:30	17:15	11.45	18.39	14.2	2627	8002	683	96.8	3544	8833	1051	2486
12163	"	17:23	18:16	9.01	8.34	11.3	3114	8002	810	91.1	3702	8846	1205	2136
12164	"	18:16	19:16	7.67	7.73	8.8	3570	7857	929	82.1	3663	8659	1259	1902
12165	"	19:55	20:41	11.57	11.60	13.5	2723	8002	709	95.7	3542	8828	1091	2460
12166	"	20:45	20:53	9.28	9.38	33.0	468	937	122	40.4	444	1085	140	280
12167	"	20:54	21:50	8.54	9.10	10.3	3305	8002	860	88.3	3607	8795	1165	2941
12168	"	21:50	22:50	7.59	7.70	8.4	3912	8002	1017	85.3	3724	8954	1263	1831
12169	"	22:57	23:02	6.24	6.39	7.1	273	534	71.2	5	249	545	87	84
12170	17.7.	0:27	1:19	9.00	9.49	12.9	3122	8002	812	104	3587	8900	1020	2300
12171	"	1.20	2.11	8.9	9.5	17.3	3096	6792	804	139	3039	7555	898	1747
12172	"	2.12	2.13											
12173	"	2.13	2.17											
12174	"													
12175	"	2.18	3.07	6.68	7.12	8.7	2906	5842	756	66	2793	6666	806	1358
12176	"	4.34	5.30	~~10.9~~ 8.5	~~11.2~~ 8.2	10.9	3339	8002	774	94	3654	8756	1070	2224
12177	"	5.30	6.34	8.9	9.2	8.7	3812	8002	991	86	3762	8824	1163	1845
12178	"	6.34	7.31	6.37	6.60	8.1	3414	6959	889	72	2976	6947	949	1371
12179	"	8:24	—	}	junk due to LG-problem									
12180	"													
12181	"	8:29		11.05	11.14	10.4		1967	~	~	run summary lost	~	~	~
12182	"	8:50	9:46	9.99	10.13	18.4	3351	8002	873	161	3605	8898	1038	2286
12183	"			junk due to LG-problem										
12184	"	9:50	10:13	8.20	8.35	10.6	1364	3668	355	38	1529	3800	453	960
12185	"			no events due to LG-problem										
12186	"	10:17	10:29	7.55	7.70	17.0	105	18	105	18	461	1043	127	278
12187	"	10:31	11:07	7.25	7.37	10.5	1691	3887	440	46	1584	3932	496	861
12188	"	11:17	11:19	6.38	6.47	8.4		208						
12189	"	11:29	11:34	6.16	6.26	7.6	268	531						
12190				junk - LG problem										
12191	"	11:38	11:56	6.01	6.10	7.5	1030	1916	268	20	825	2147	244	406
12192	"	13:12	13:54	11.81	11.86	18.4	2485	8002	647	119	3495	9074	894	2800
12193	"	13:54	14:46	9.92	9.82	17.0	3042	8002	792	135	3442	8966	964	2121
12194	"	14:46	15:15	8.30	8.30	12.4		4626	~	~	run summary lost			

Run	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> $\times 10^{30}$	SLdt Run	SLdt Exp.	IBM/TAPE	BP [V]	T_2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks
125													LG Readout Hives hold 4 events R12160 —
12160	ON	ON	ON	7.87	25.12	9428.53	IBM	0,55	59	295	9	17.300	
12161	"	"	"	6.94	22.63	9451.16	"	0.5	52	293	3	"	
12162	"	"	"	8.89	23.36	9474.52	"	0.8	59	299	8	"	
12163	"	"	"	7.48	23.29	9497.81	"	0.6	60	308	11	"	
12164	"	"	"	6.53	23.30	9521.11	"	0.55	58	308	8	"	
12165	"	"	"	8.80	23.97	9545.08	"	0.57	60	298	10	"	
12166	"	"	"	5.67	2.65	9547.73	"	0.57	60	35	1	"	Triggerbox hang-up
12167	"	"	"	7.02	23.21	9570.94	"	0.56	59	284	12	"	
12168	"	"	"	6.22	24.32	9595.26	"	0.55	59	296	11	"	
12169	"	"	"	5.42	1.48	9596.74	"	0.54	57	18	1	"	Beams dump
12170	"	"	"	7,59	23,71	9620,45	"	0,7	60	288	15	"	
12171	"	"	"	5.71	17.68	9638.13	"	0,55	59	225	3	"	
12172	"	"	"		0,19	9638.32	"					"	only a few events
12173	"	"	"		0,84	9639.16	"					"	only a few events
12174	"	"	"				"					"	only pedestals, error —
12175	"	"	"	5,41	15,71	9654.87	"	0,5	60	205	9	"	
12176	"	"	"	8,16	27,25	9682,12	"	0,7	59	325	12	"	
12177	"	"	"	7.10	27.06	9709.18	"	0,6	59	340	13	"	
12178	"	"	"	5,65	19.28	9728,46	"	0,5	59	293	11	"	
12179	"	"	"				"	0.75				"	
12180	"	"	"				"					"	
12181	ON	ON	ON	9.32	6.29	9734.75	"	0.68				"	Nord hang up 14
12182	"	"	"	7.79	26.10	9760.85	"	0.60	59	300	9	"	
12183	"	"	"				Tape F4138	0.6	59			"	
12184	"	"	"	2.71	10.51	9771.36	Tape F4138	0.55	53	125	6	"	
12185	"	"	"				Tape	0.				"	
12186	"	"	"	6.05	2.44	9773.60	IBM	0	49	38	0	"	
12187	"	"	"	6.19	10.47	9784.07	"	—	50	141	4	"	
12188	"	"	"	5.38	0.47	9784.54	"	0.47	[illegible]	6	0	"	
12189	"	"	"	5.33	1.43	9785.97	"			16	0	"	Short runs due to DCB problems
12190	"	"	"										
12191	"	"	"	4.74	4.88	9790.85	"	—	55	65	4	"	Beams dumped
12192	"	"	"	8.17	20.30	9811.15	"	—	62	249	8	"	
12193	"	"	"	7.49	22.79	9833.94	"	0.75	58	266	4	"	
12194	"	"	"	7.27	12.75	9846.69	"	0.55				"	Nord hang up 14

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E₁>6GeV	T2 Bit 17 2T·E₄·2tr.

(very frequently firing)

Note. [If the number of spinning blocks increases during one run, please start a new run. At the beginning of each run, pedestal values are up-dated. Takeda]

15 30 IBM people came to claim that we should keep the graphic display terminal always ON.

15 35 Run 12161 2 × Error 39 in 34643 ; MEMORY OUT OF RANGE

ca. 15 00 μ-system μ-computer in crate 12 & 8 changed. Please monitor missing crate messages

16 00 Eckhard Elsen & Howard Mills on shift

16 30 New fill ready. Run 12162 started

YSPY claims trigger 2 output missing : 121 - did not occur again

17 05 Intermittent "μ-crate ~~missing~~ missing" messages.

19 10 Beams dumped.

20 55 "Magnet read error - kmx cannot be set". Twice kmx works properly - rebuilt YMAGNT and message does not come back.

20 00 Trigger-box hang-up on level 3. Stop run and Hart run 12167

21 50 "YSPY : error in LG-initialisation, check skipped" — continue run 12168

22 15 We empty the waste bin (for the next shift to fill)

23 55 TASSO's idea of awaiting for the new shift before filling hasn't worked ← ASSUM & GODDARD

2 10 Level 3 hang up in trigger box. Stop run (Terminal also dead, local switch off helps)
" Next run gives errors in LG system initialization. Skip LG Check " ← LG people
We stop and start Run 12173
The cannon HV etc occurred several times, runs stopped. 12175 seems quiet again.

5 15 Memory out of range ; at same time, IBM error flash. Try IBM again, run continues

8 00 McCann & Wormin on shift

8 25 At start of runs 12179 and 12180, we get HV error for LG. In both cases, we stop run immediately and start again. Run 12181 starts OK.

8 50 Nord hang up on level 14, we reload the Nord and set the LG-Threshold

9 11 2 × memory out of range.

9 20 Standard histograms checked : OK

9 45 Suffering from "IBM-busy" : high deadtime 18% instead of 10 %

ON/OFF N50	MIP	TOF	<L> ×10³⁰	SLott Run	SLott Exp.	IBM TAPE	BP [V]	T2 Reg. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

17.7.82

9 50 phone to Pluto ; they also see an IBM-dominated deadtime
we decide to write to tape for a while

9 51 at run start 12183 : HV error for LG → run stopped, next run OK.

10 00 temperature 16°C sprinkler turned on

10 10 YSPY detected dead DL8 178

10 15 at run start 12185 : HV error for LG → run stopped, next run OK.

10 18 at run start 12186 : Lecon crate missing : 12, McCann & Bowdery are investigating

10 30 DL8 177 replaced, start new run 12187 ← still hole in wire maps
JDAS readout error 44 time out branch 6 crate 6

10 52 2 × error 39 in 34643 memory out of range
DL8 177 changed back to the original one
DL8 179 pulled out, connectors cleaned, put back in → now that hole is gone
→ another hole in the wire maps : 4 wires missing at 1452

11 55 beams dumped
DL8 181 replaced : no sucess, replaced again, tst with pulser, works OK.

12 30 PETRA keeps on loosing the beam

13 10 new fill ready

In case of protocalling trigger hangups, use new red level numbers on resp. sheet !

Because there were still level 5 hangups, following measures were taken: T2 shifted later another 20 nsec.
T2 Hit Gate (Rücksetz) shortened another 80 nsec. Carefull Scope viewing showed that there is still 200 nsec Safety in the Ke.
(During Run 12192, around 13.35)

14 00 Level 5 Trigger hang-up.
Beams are poor. Trigger rate is ~ 6 Hz and deadtime is ~ 15-20 %.

~~14 30~~ PKL say they have some instability in the beams.

15 00 IBM transfer error 000054 sub 140000 count 002, try link again successfully

15 14 error 39, memory out of range

15 15 hang up of NORD on level 14 during error printing on line printer

15 26 error 39, memory out of range

15 31 " " " " " 2X

15 30 After being pretty quiet for ~ 22 hours, "μ crate missing" messages are re-appearing at the previous rate (i.e. ~ 200 per run of 8000 records out)

16:00 Darvill & Heinzelmann on shift.

Run	Date	Start	Stop	at Run Start I_+	at Run Start I_-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	To rej. $\times 10^6$	T_1 Acc. Sum.	T_2 Acc. Sum	T_1 Bit 2 $E_1 > 6$ GeV	T_2 Bit 17 2T · E4 · 2tr.
12195	17.7.82	15:21	16:01	7.52	7.48	19.4	2117	6406	551	107	2283	6947	632	2023
12196	"	16:34	17:08	11.41	11.39	23.8	1775	4269	462	110	1890	4844	571	1286
12197	"	17:05	17:56	9.83	9.95	11.3	3034	8002	790	89	3564	8955	1067	2399
12198	"	17:56	18:55	8.25	8.40	10.6	3482	7994	906	96	3639	8926	1116	2214
12199	"	18:58	19:13	6.90	7.04	10.8	1042	2248	271	29	1033	2610	328	572
12200	"	19:21	19:47	6.44	6.58	7.4	1576	2899	410	30	1306	3338	415	719
12201	"	20:17	21:05	11.24	11.32	12.8	2854	8002	742	95	3576	9026	948	2557
12202	"	21:05	21:35	9.39	9.56	17.5	1761	4384	458	80	1954	4892	567	1286
12203	"	22:03	22:45	11.30	11.36	18.1	2516	8002	655	119	3514	9482	892	2920
12204	"	22:46	23:39	9.47	9.59	11.1	3113	8002	810	90	3606	9232	1048	2373
12205	"	23:39	00:30	7.94	8.07	8.9	3803	8002	990	88	3670	9027	1124	2086
12206	18.7.82	0:44	0:47	6.59	6.72	8.0	157	316	40	32	126	361	40	66
12207	"	1:23	2:10	11.35	11.13	13.2	2797	8002	727	96	3552	9037	903	2483
12208	"	2:10	3:02	9.47	9.41	11.2	3061	8002	715	89	3593	8928	953	2275
12209	"	3:01	4:03	8.09	7.99	11.5	3631	8002	944	108	3664	9055	1051	1945
12210	"	4:03	4:50	6.80	6.72	9.4	2396	4683	622	58	2147	5351	612	1024
12211	"	5:18						183						
12212	"	5:36	6:19	10.06	10.10	13.9	2513	8002	653	91	3555	8673	770	2311
12213	"	6:19	7:09	8.72	8.77	12.3	2962	8002	770	94	3657	8923	869	2158
12214	"	7:09	8:13	7.54	7.60	8.8	3794	8002	987	87	3570	9355	993	2114
12215	"	8:14	8:17	6.21	6.28	10.1	166	393	43	43	121	457	51	111
12216	"	8:58					NO run summary							
12217	"	9:07	9:49	10.33	10.41	15.3	2485	8002	646	98.9	3586	8933	912	2818
12218	"	9:49	10:19	8.04	8.13	19.2	1760	5267	457	88	2181	5773	648	1728
12219	Run	Summary	lost				~1200							
12220	"	10:48	11:39	7.35	7.44	11.1	3065	8002	797	88	3598	8915	926	2270
12221	"	11:40	11:57	6.34	6.44	8.8	1001	2175	260	23	925	2474	266	604
12222	"	12:44	13:32	10.63	10.71	14.1	2848	8002	741	104	3652	9028	1001	2515
12223	"	13:33	14:27	8.95	9.03	10.4	3239	8002	842	87	3617	9063	1055	2299
12224	"	14:29	14:42	7.42	7.56	9.0	736	1692	191	17	739	1870	226	467
12225	"	15:21	15:41	11.74	11.65	14.5	1165	3398	303	44	1465	3934	384	1263
12226	"	15:41	16:32	10.67	10.64	12.0	2997	8002	779	93	3560	9161	1005	2613
12227	"	16:38	17:35	8.75	8.75	10.3	3372	8002	877	90	3394	9661	964	2586
1228	"	17:35	18:17	7.4	7.42	9.7	2480	5447	645	62	2295	6598	703	1700

ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp	IBM/TAPE	BP [V]	T_2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks
ON	ON	ON	5.67	12.00	9846.69 9858.69	IBM	—	47	155	5	17.300	
"	"	"	7.59	13.47	9872.16	"	0.7	60	192	4	17.300	
"	"	"	8.26	25.06	9897.22	"	0.65	58	307	6	"	
"	"	"	7.31	25.45	9922.67	"	0.55	59	315	8	"	
ON	ON	ON	8.01	6.27	9928.94	"	0.5	60	74	3	"	
"	"	"	5.47	8.62	9937.56	"	0.41	59	112	4	"	Beams dumped
ON	ON	ON	8.26	23.58	9961.14	IBM	0.78	61	275	12	17.300	
"	"	"	7.66	13.49	9974.63	"	0.65	59	160	8	"	Beam lost
ON	ON	ON	8.36	21.02	9995.65	IBM	0.80	62	269	13	17.300	
"	"	"	7.38	22.97	10018.62	"	0.66	61	280	11	"	
"	"	"	5.85	22.29	10018.91	"	0.55	59	268	15	"	
"	"	"	5.37	0.84	10019.75	"	—	58	7	0	"	Beams Dumped.
"	"	"	6.48	18.11	10037.86	"	0.83	62	214	11	"	
"	"	"	6.71	20.53	10058.39	"	0.74	60	268	6	"	
"	"	"	6.01	21.82	10080.21	"	0.71	61	307	10	"	
"	"	"	5.10	12.22	10092.43	"	0.50	60	162	8	"	
				0.32	10092.75	"	0.95				"	nord crash. - summary lost
ON	ON	ON	6.97	17.07	10109.83	"	0.85	62	180	10	17.300	
"	"	"	5.98	17.72	10127.55	"	0.76	62	225	9	"	
"	"	"	5.67	21.50	10149.05	"	0.54	60	258	9	"	
"	"	"	5.28	0.88	10149.93	"	0.50	61	6	0	"	
ON	ON	ON	—	—		"	0.95					NORD hung up Level 14
"	"	"	8.92	22.18	10172.11	"	0.90	60	263	9	17.3	
"	"	"	7.82	13.76	10185.87	"	0.80	60	164	2	"	ID trip
"	"	"		~8	~10193.87	"	0.73					Nord hang.
"	"	"	6.28	19.24	10213.11	"	0.80!	60	248	5	"	
"	"	"	5.18	5.19	10218.30	"	0.50	57	63	4	"	Beam lost
"	"	"	8.35	23.78	10242.08	"	0.80	61	320	14	"	
"	"	"	7.38	23.89	10265.97	"	0.5	59	324	5	"	
"	"	"	7.28	5.36	10271.33	"	0.45	56	69	3		Beams lost.
"	"	"	9.02	10.51	10281.84	"	0.80	60	122	3	"	Try to free Tektronix & Scitran
"	"	"	8.04	24.05	10305.93	"	0.70	60	285	11	"	↓4 counts
"	"	"	6.74	22.73	10328.66	"	0.60	59	270	8	"	↳ LG read out thresh = 6 counts
"	"	"	5.72	14.19	10342.85	"	0.50	58	188	4	"	Beams dumped

Run	Date	Start	Stop	at Run Start I+	I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E>76GeV	T2 Bit 17 2T·E>2tr.

16:34 new filling ready. Start run 12196
17:04 No triggers — trigger box problem level 5 — reset easily so we stop run and start run 12197.
19:07 Error message "ERROR 24 IN 34237 AT 1: RING VIOLATION." We rebuild Y MAIL, reload Nord and reset readout threshold of Lead glass ADCs.
20:16 we have a new filling and start run # 12201

18.7.1982 Nozaki and Glendinning
00.31 JIAS read error 44 Time out branch 3 crate 2 : Muon chambers.
01:29 Note to Manchester People: I counted the no. of times each crate was missing for a while, although crate 12 is dominant crate 13 is about half as frequent and the others all together are somewhere in between. (crate 9 is 3rd). This it seems not just an SCC problem. ↳ keep happening but we assume it's not serious.
2:09 Start getting "camac error during magnet read — overflow in DVM" on printer.
3:41 No triggers. level 5. reset and restart Ok
5:26 NORD hangup. N10.50 programs were reloaded.
LG threshold was set to 4. (after ~200 watts — forgot)
6.Ldt Memory out of range in YCLRTV, but still goes, so decide to leave it for now.

0800 Yamada & Rowe on Shift

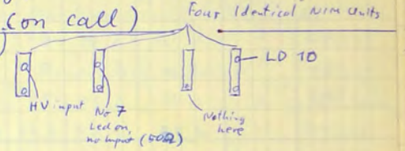
805 magnet read error : YMAGNE. CAMAC read error in magnet reading
900 NORD hung up Level 14.
Right before the hung up we tried to use 'N10-MONITORING', which might have caused it.
911 Trigger 3 ½ missing. Group 3 Streak ≡21. See if this recurs.
930 "memory out of Range", still kept running.
1008 no trigger. trouble level 5. The recipe worked.
1009 IBM Link went down. Tried link again → OK.
1017 I.D. trip
1042 Nord hangs on level 14.
1147 Beams lost — ID trip.
1300 No events. Trigger box hang-up at level 5.
1425 Rooftwater is stopped since it became cloudy.
14:40 Beams lost.
15:20 New Fill ready.
15:30 All 'logical units' became jammed. Stop run. Restart (forgot to do the LG thing).

Run	Date	Start	Stop	ON/OFF N50	MIP	TOF	<L> ×10³⁰	SLdt Run	SLdt Exp.	IBM/TAPE	BP [V]	T2 Rej. Ev. Fr.(%)	Bhabha	MH	Ebeam	Remarks

This freed one histogram on Tektronix but then jammed up again. If starting next run doesn't cure it, maybe have to reload Nord.

16.00 Dittrich and Minora are on Shift
16.30 NORD reloaded because many terminals don't work
YCLRTV rebuild.
from Run 12227 on LG threshold is 6 counts (has been 4 counts since Run 12160)
(M. Minora) see P. 123
1652 2x YCLRTV memory out of range.
2100 Nord crash level 14
restart NORD.
2350 1 inefficient DL8 seen in the JETC-WIREMAP histog.
if this gets completely inefficient, call Komamiya (on call)

24.02 New filling ready Wichbrock & Thrilled auf Schicht. (on shift)
When attending to Run ID up, Alarm was released. Status: Alarm NIM crate
No space in ID blue ID file!
00.12 Attempt to clear histograms leads to blocked display: always "Too quick -..."
without anything on the screen, also all terminals blocked.
~~0.25 Mysterious hangup Data stops~~ After call to Dittmann: Run stop & Restart helped. After Run stop suddenly the new histogram requested 10 min ago appeared on Tekt. Screen.
0.29. Run 12234 failed because of Y Volts, Error in LG Initialization. No Run Summary, No Data
12235 stopped too: same status as due. Run 12233. Stopped because I wanted to check JETC wiremap.
Gap around Wire 1440 seems diminished (See Note 23.50 on this page)
0.50 Deadtime rather high: 12.5 - 13 %. : FWMU Triggers have exceptionally high rate (Both!)
called PKR. They said: all o.k. but tuned something. Things went worse! > Trigger-Bits
Standard way into display hangup. F Keys ~~do~~ into N50-~~Mon~~ History, etc. Trigger-Bits: Term. 9 responds with >
but no action on Term. 34; LUN 36 still recording IBM JAMS (quite a lot!), but other LUN's dead)
Decide to let the run come to end. Funny thing: IBM counter on Colour TV not advancing. Stands at 2873.
" " stop run. Cannot do, all things blocked:
Colour TV reading Trig 7605, N10 4620, N50 4618, IBM 2873, Nord Hangup Level 14
Reload NORD from bottom helped so far, but after Run start → No Colour TV. Run stopped again, Path via
ESC ↓ and RT 2DAS ↓ etc. Run started o.k. But attempt ~~don't~~ to look at Histogram led into
same dead end. Decided: Let it stay there as long as data flow.
Permanent blink of missing muon crates. 8, 10, 13, 12, 7, 4, 9, 6, 11, 3, 5,
Note on 2DAS: If Run is running, all LUN's are dead, even if no attempt for histogram was made.
(No programming possible) Possibly 2DAS must be reassembled.
This holds also, when NORD is ↓ loaded afresh from Master Clear
Except LUN 36 which is still recording IBM JAM's

(2)


Run	Date	Start	Stop	at Run Start I_+	at Run Start I_-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	To rej. $\times 10^6$	T_1 Acc. Sum.	T_2 Acc. Sum	T_1 Bit 2 $E_1 > 66$ GeV	T_2 Bit 17 2T · E4 · 2tr.	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp.	IBM/TAPE	BP [V]	T_2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks
12229																											Nord crash Run sammary lost
12230	18.7.82	21.09	22.24	9.23	9.16	10.6	3250	8002	845	89	3575	9182	1024	2263	ON	ON	ON	7,91	25.72	10368,57	IBM	0,5	59	304	5	17.3	
12231	"	22.24	23.31	7.33	7.28	8,2	4003	8002	1041	85	3645	9365	1066	2036	"	"	"	6.07	24.29	10392,86	"	"	60	313	9	"	
12232	"	"	"					92											0,2	10393,08	"						Beams dumped
12233	19.7.82	0.05	0.27	11.28	11.58	14.4	1137	3612	296	42,6	1672	3970	414	1111 (!)	"	"	"	9.41	10.70	10403,76	"	0.8	62%	133	5	"	Stopped because of NORD problems | 12234 does not exist
12235	"	0.31	0.44	9.54	9.99	14.2	787	2409	204	29	1125	2592	274	772	"	"	"	8.53	6.71	10410,47	"	0.75	61%	87	4	"	" " " " "
12236	No	Run	Summary	because of	NORD	hangup																					Nord hangup
12237	Short	Run						180	Rec. Out																		
12238	19.7.82	1.23	2.10	8.38	8.71	11.3	2996	8002	729	88	3322	8879	960	2138	"	"	"	8.14	21.55	10432.02	"	0.7	61%	263	10	"	Normal End
12239	"	2.16	3.07	7.17	7.41	9.4	3059	7067	796	74,9	3238	7893	895	~~7893~~ 1723	"	"	"	6.20	18.95	10450,98	"	0.65	60%	241	7	"	
12240	"	3.09	3.24	6.20	6.48	8.5	888	1880	231	19	838	2152	239	433	"	"	"	5.41	4.80	10455,78	"	0.53	61%	62	2	"	
12241	19.282																				"	0.8				17.300	12244 skipped
12242	"	4.17	5.11	9.99	10.23	10.9	3169	8002 (TV screen)	824	90	3592	8942	992	2283	ON	ON	ON				"	0.7	60%	302	7	"	No Run Summ (Nord Hangup) 12243 short Play run
12243	"	5.11	6.02	8.36	8.59			6389 +	833		2945	7275	(Visual Scaler Numbers)		"	"	"	8.13	25.78	10481,56	"	0.57				"	
12244	"	6.10	6.29	7.04	7.27	8.1		1874			879	2105			"	"	"	No Run Summary			"	0.45				"	Nord crash Level 14
12247	"	6.37	7.51	6.56	6.78	8.1	4399	2583	1144	80	3388	8941	926	1900 ?!	"	"	"	7.23	5.69		IBM	0.45				"	Data from TV or Visual Panel
12248	19.2.82	10:21	10:55	11.71	11.41	>11.9	~~2500~~	> 5000							"	"	"	4.95	21,22	10503.33	"	0.45	59%	281	8	"	
12249	"	11:34													"	"	"		≈20.00	10523.33	"					"	NORD hangs on LEVEL 14
12250	"	11:55	12:52	8.20	8.20	7.2	3230	> 1000 5862	841	60	2612	6633	762	1833	"	"	"				Tape 711 118	0.55					NORD crash
12251	"	14:00	14:24	11.6	11.5	13.7	1251	3637	326	45	1600	4145	441	1305	ON	ON	ON	5.36	17.32	10540.65	IBM	0.50	58%	224	6	"	Beam dump
12252	"	14:25	14:46	10.5	10.4	11.6	1267	3343	330	38	1498	3702	430	983	"	"	"	9.51	11.96	10552.55	"	0.65	60%	140	9	"	
12253	"	14:46	15:42	9.7	9.6	11.7	3234	8001	842	98	3609	8928	1057	2245	"	"	"	9.90	12.55	10565.10	"	0.62	58%	123	5	"	
12254	"	15:43	16:23	8.11	8.07	10.0	2363	5550	615	61	2500	6170	734	1408	"	"	"	8.48	27.41	10592.51	"	0.60	58%	318	17	"	
12255	"	17:09	17:36	6.12	6.25	6.3	1381	2148	360	23	931	2555	292	425	"	"	"	7.52	17.78	10610.29	"	0.50	58%	197	7	"	
12256	"	21.18	21.48	11.4	11.2	16.6	1674	5243	725	72	2302	6019	603	2013	"	"	"	4.05	5.65	10615.94	"	0.50	54%	76	2	"	
12257	"	21.51	22:37	10.04	9.89	15.2	2733	8001	711	108	3464	9773	936	3017	"	"	"	9.6	16.07	10632.01	"	0.8	61	183	9	"	
12258	"	22.37	23.28	8.64	8.54	12.6	3004	8001	781	98	3522	9617	962	2879	"	"	"	8.38	22.90	10654.91	"	0.75	62	305	10	"	
12259	19.7.82	23:28	0:22	7.38	7.30	9.7	3209	7202	834	80	3166	8473	851	2113	"	"	"	7.86	23.60	10678.51	"	0.70	60	268	9	"	
12260	20.7.82	0:53	1:37	11.32	11.30	14.1	2577	8001	670	94.3	3635	8674	932	2369	"	"	"	6.07	19.49	10697.99	"	0.6	60	238	7	"	Beams dumped
12261	"	1:37	2:24	9.49	9.50	12.4	2804	8001	729	90.3	3614	8807	919	2287	"	"	"	8.68	22.36	10720.35	"	0.90	61	265	9	17300	
12262	"	2:25	3:16	8.12	8.8	10.9	3056	8001	794	86	3716	8706	942	1945	"	"	"	8.24	23.09	10743.44	"	0.72	60	282	12	"	
12263	"	3:16	4:17	6.95	6.96	9.2	3621	8001	941	87	3684	8171	969	1833	"	"	"	7.29	22.29	10765.73	"	0.70	60	264	10	"	
12264	"	4.17	5:30	5.87	5.89	7.4	4351	8001	1132	83.8	3706	9434	1047	1758	"	"	"	6.01	21.77	10787.50	"	0.55	60	265	11	"	
12265	"	5:31	6:28	4.90	4.91	6.2	3380	5367	879	54.7	2360	6496	647	1043	"	"	"	4.46	19.39	10806.89	"	0.45	61	243	4	"	
															"	"	"	3.37	11.39	10818.28	"	0.39	60	156	4	"	Beams dumped

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E₁>6GeV	T2 Bit 17 2T·E₄·2tr.	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	SLdt Run	SLdt Exp.	IBM TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha MH	Ebeam	Remarks

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2.55 Schmüser - Tasso announces new filling at 3.15

3.5 Simultaneous Errors: Memory Parity, IBM Transfer Error 52, Subsyst. 0, Err CNT 0
Run stopped

3.14 Error flashing Illegal TOF BANK Several times

3.55 Error in LG Initial. Run 12241 lost. Sorry: At NORD Reload, Thresh. Setting forgotten.
Done before Run 12242

4.09 Nord Hangup Level 14
Note: Going through Pedestrians Guide once leaves TV screen blank. Only EXIT and repeating RT etc. helps.
Run 12243 Short Play run only (Nord Error and SET-LG forgotten)
Run 12244 Several "Memory out of Range"

5.19 Short Flicker NORD50 Busy No Triggers for up to 6 sec. Status disappeared without operator intervention

6.02 Nord Crash Level 14. Double RT-~~Sec~~ procedure. Run Start Leads to Error Message "False Interrupt."

6.29 " " " " Nord Lamps: Data 14, Protect Ring 3, Paging, Level +

7.00 "Injection not Possible, Trouble with Linac II"

7.52 Beams Lost, ID Trip, Also LG HV Endcap Overcurrent.
Break — Trouble with Linac II

8.00 Elsen (late), Nerrosha (early) that compensates For what??

8.40 Injection on screen.

9.10 "Trouble with a power supply in transport way Desy-Petra"

10.20 Beams: when switching on HV, 2 LG powersupplies didn't come on, they had overcurrent, reset ok.
μ-crate 1 missing — reset

10:22 After the "memory out of range" message all terminals are blocked, except for command terminal and color TV.

10:55 NORD on level 14
Cards regenerates system. Take out PETRA link. Drive to tape to see if problem is connected to IBM-link (run 12249). At run-start tagging HV (HFR GS) were ~~off~~. Re-restart that run.

11:45 Nord on level 14. Start ~~new~~ run writing to IBM.
Petra information not ~~connected~~ read. We get energy and current by SET-PETRA.

14:00 Wrong energy ~~written into events of~~ displayed for run 12251. PETRA sends 10.317 GeV instead of 17.3.

14:22 Start run 12252 without PETRA information reading, update manually. Colour TV still says 10.317 GeV. Look into run summary control ⇒ energy = 17.3 GeV, also so it is only YGETV!

Events of previous run do carry proper energy! Switch back to automatic update.
Since run 12251 we run without voltage and magnet checking (cards in testing ≠ readout without CC10-crate)

14:45 Start run 12253 with result YGET17V → energy reading okay!

15:00 Frequent "muon crate missing" (mainly 4, 12, 10, 13 etc)

16:00 Petersen + Goddard (1-14)

17:10 To fix the randomly-distributed "μ crate missing" messages, T2 has been made 50 ns earlier (dial setting reduced from 6.60 to 6.40) — this was the cause of the sudden start up of the problem on Saturday (See p. 127).

THE RATE OF MU CRATE MISSING SHOULD NOW BE TYPICALLY < 20 PER RUN OF 8000 RECORDS OUT. IF IT SHOULD GO ≳100 PER RUN THEN CALL ON-CALL EXPERT (OR ANY MANCHESTER PERSON WHO CAN BE FOUND).

17:36 start for a new filling

21.50 Not able to draw any histograms on unit 74, therefore we reloaded Nord 50.
Magnetic field appears to be recorded ~~for~~ in the event as 0. (although it is on).
What run? Start R 12255

R 12255 – 12270 has B=0 in data
12254 and 12272 have B = -4.847 kG
to be corrected by KALIBR
MO. 11/8.82

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0:00 Glendinning + Odaka.

0:21 Beams dumped for new fill

:50 New Fill.

03:27 Jdas error 44-timeout branch 3, crate 2 : Muon chambers. Happened once only → ignore so far.

:31 " "

4:10 DESY has a trouble with LINAC. PKR cannot start the injection.

6:28 Beams are partly lost, and then dumped.

8:00 Wiebrock + Yamada on shift

8:20 Beams lost

8:29 New fill

Run	Date	Start	Stop	at Run Start I_+	at Run Start I_-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	To rej. $\times 10^6$	T_1 Acc. Sum.	T_2 Acc. Sum	T_1 Bit 2 $E_{1.76GeV}$	T_2 Bit 17 2T·E₄·2tr.
136														
12266	20.7.82	7·18	8.06	10.87	10.83	12.6	2818	8001	233	92	3611	8843	910	2341
12267	"	8.06	8.23	9.15	9.12	9.9	948	2211	247	24	1010	2525	288	644
12268	20.7.82	9.55	10.45	11.04	10.96	16.2	2961	8001	771	125	3676	8850	1022	2340
12269	"	10.46	11:42	8.90	8.82	9.9	3337	8001	783	85	3711	8934	1082	2068
12270	"	11.43	12:31	7.44	7.39	8.5	2712	5696	706	60	2659	6383	796	1291
12271	20.7.82					Dummy Run								
12272	20.	13.05	13.13	11.55	11.44	14.6	338	1054	88	13	455	1162	112	300
12273	"	13.25	13:54	10.32	10.22	14.4	1700	5211	442	63	2314	6091	650	1834
12274	20.7.82	14.32	15.13	11.31	11.34	21.0	2257	8002	587	123	3474	8626	351	2715
12275	"	15.13	15:23	9.21	9.37	33.6	534	2338	139	47	994	2261	181	854
12276	20.7.82	16.14	16.17	10.83	10.47		— ignore this run,			328	records only —			
12277		rubbish												
12278	20.7.82	16.26	16.33	10.34	10.02	16.7	392	1307	102	17	538	1570	125	494
12279	"	rubbish, hang-up at run-start												
12280	"	17.11	17.38	10.94	10.95	16.9	939	3040	245	41	1310	3466	348	1072
12281	"	19.10	19.51	11.34	11.22	16.6	2418	8002	629	104	3503	8889	924	2670
12282	"	19.51	20.14	9.62	9.53	15.1	2557	8002	665	100	3461	9534	919	2822
12283	"	20.34	21.18	8.28	8.28	14.4	2642	8002	688	93	3535	9107	857	2455
12284	"	21.20	22.14	7.16	7.17	14.3	3192	8002	830	119	3544	9604	913	2303
12285	"	23.30	0.05	11.01	10.97	15.6	2611	8002	679	106	3646	8938	960	2489
12286	21/7/82	0:15	1:05	9.24	9.26	13.0	2971	8002	773	100	3637	9331	1018	2449
12287	"	1:06	2:04	7.86	7.81	9.9	3457	8002	899	89	3648	9349	962	2073
12288	"	2:04	2:15	6.63	6.66	10.1	607	1450	158	16	647	1724	179	449
12289	"	2:23	2:29	6.31	6.34	11.5	337	756	88	10	329	859	75	280
12290	"	2:56	3:39	11.42	11.60	15.1	2517	8002	655	99	3612	9115	906	2707
12291	"	— FUNK —												
12292	"	3:42	4.27	9.5	9.7	13.3	2699	8002	702	93	3673	9127	974	2515
12293	"	4:28	5:18	8.14	8.32	11.3	3033	8002	789	89	3628	9240	1022	2378
12294	"	5:19	6:04	6.9	7.1	12.6	2729	6977	710	89	3243	7810	774	2028
12295	"	6:39	7:22	11.5	11.6	17.3	2577	8002	670	116	3390	9494	836	2988
12296	"	7:22	8:10	9.75	9.80	13.1	2832	8002	736	96	3576	9418	1054	2678
12297	"	8.10	9.10	8.27	8.34	10.7	2945	7448	766	82	3340	8479	939	2109

Run	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp.	IBM/TAPE	BP [V]	T_2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks
136													
12266	ON	ON	ON	7.80	21.98	10840.26	IBM	0.83	60	262	6	17.300	
12267	"	"	"		7.46	10847.72	"	0.56	60	99	3	17.300	
12268	"	"	"	8.72	26.81	10873.53	"	0.75	60	316	22	17.300	
12269	"	"	"	8.17	27.27	10900.80	"	0.6	60	334	8	17.300	
12270	"	"	"	6.60	17.90	10918.70	"	0.53	60	248	9	17.300	
12271													12271 only LG Test (Failed)
12272	"	"	"	9.24	3.12	10921.82	"		54	43	0	17.300	~~Beam lost~~
12273	"	"	"	9.11	15.49	10937.31	"	0.75	61	198	8	17.300	Beam lost
12274	"	"	"	7.62	17.19	10954.50	"	0.8	62	210	6	17.30	magnet fluctuated to 7510 ignored BP 12 p
12275	"	"	"	6.28	3.35	10957.85	"	~~0.87~~	59	46	2	17.300	Cause: Background optimization
12276	"	"	"				"	0.78				—"—	stop run to allow D. Barbs to work on the Micro
12277										1			
12278	"	"	"	8.07	3.16	10961.01	"	0.75	61	37	2	—"—	Beams lost
12279								0.84					
12280	"	"	"	8.91	8.37	10969.38	IBM	0.80	60	107	3	—"—	Beams lost
12281	"	"	"	9.56	23.11	10992.49	"	0.73	61	286	8	"	
12282	"	"	"	8.49	21.71	11014.20	"	0.75	61	261	8	"	
12283	"	"	"	7.54	19.93	11034.13	"	0.70	60	237	8	"	
12284	"	"	"	5.92	18.90	11043.03	"	0.63	62	239	9	"	Beams dumped
12285	"	"	"	8.99	23.46	11066.49	"	0.83	60	302	10	"	
12286	"	"	"	7.79	23.14	11089.63	"	0.65	60	302	14	"	
12287	"	"	"	7.05	24.37	11114.00	"	0.58	60	256	7	"	
12288	"	"	"	6.19	3.76	11117.76	"	0.52	61	50	2	"	
12289	"	"	"	5.47	1.84	11119.60	"	—	59	17	1	"	Beams dumped
12290	"	"	"	8.8	22.25	11141.85	"	0.86	61	273	4	"	
12291													
12292	"	"	"	8.7	23.57	11165.42	"		61	302	8	"	
12293	"	"	"	7.76	23.55	11188.97	"		60	288	7	"	
12294	"	"	"	5.9	16.14	11205.11	"		60	211	12	"	
12295	"	"	"	7.6	19.63	11224.74	"	0.85	60	237	16	"	
12296	"	"	"	8.44	23.90	11248.64	"		60	297	7	"	
12297	"	"	"	7.46	21.97	11270.61	"	0.55	57	280	5	"	Beams lost.

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E>7.6GeV	T2 Bit 17 2T·E4·2tr.

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8:42 BREAK WITH INJECTION
8:46 INJECTION
10:05 No trigger: level 5. The recipe worked.
12:14 beams lost.
13:00 magnet and HV control hooked up again, also T2-initialization D.C.
~~13:00~~ Run 12271 is a dummy run. 10 to 20 events only.
13:15 LG. HV drop. by over current ALARM. . Run 12272 stopped.
~~RI-HB~~ Nominal HV's are rewritten after the error reset. Yamada → Tokoshita
13:54 Beams lost when restarted RUN 12275 beam pipe current too so high. and Background opt. being done.
15:29 1st chamber overcurrent RUN already paused.
15:30 Beam lost
15:55 when background optimisation, beams are so bad and LG HV's down.
16:00 Yamamiya, Utrecht
16:14 Readout-Error, timeout bit 4, cr. 1
16:20 Reset H.V. for LG. (Tokyo) counters by means of RI-HB.
Runs 12276 & 12277 are dummy.
16:33 Beams lost, ID tripped.
17:10 Run 12278 rubbish: ~~HV err~~ at run-start message on line-printer: "error in LG-system initialization, skip LG-check ... " Stop run, start new one: OK.
17:19 Pause run due to background optimization
17:37 Beams lost
18:10 "short break"
19:00 New beams ready
22:10 Trigger-~~box~~ hang-up, "level 5", cured ~~due to~~ according description.
22:17 Beams dumped.

00:00 Wednesday 21/7/82 Dittmann & McCann

00:25 YSBY error "T3 input missing ST36 GP3". Statistics?

Run	Date	Start	Stop	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	∫Ldt Run	∫Ldt Exp.	IBM TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

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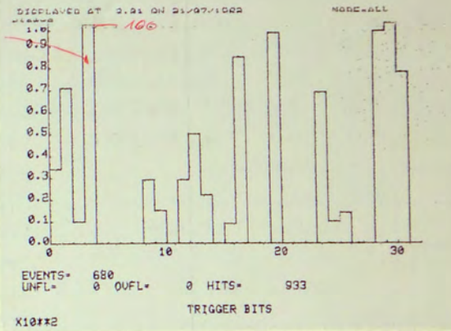
3:00 Who put this trigger in?

Please take it out again.

1. I don't remember that such a trigger was discussed. (your memory is bad, it was)
2. It increases the rate by 100/680 since it has almost no overlap with any other trigger, and the dead time increases from 10 → 15%.
3. ~~It~~ It is a T1-accept, so no on-line reduction
4. It is very much background sensitive, so if bad conditions, we have high dead time.
5. We had long fights with TOKYO to get their trigger down to reasonable rates (bit 2). Now somebody puts a trigger in, which is even higher than this one.
6. What is the physics of this trigger?

Rip is bad!

Of course like all other forward trigger.



When this trigger was introduced (to check on trigger efficiency in FWMV events) it had no effect on rate. It should indeed be eliminated, I shall do that to test the effect on deadtime.

3:30 HV Read error in initialisation phase. STOP / START run helps.

8:00 Pearce, Kobayashi 21/7/82
9:00 Beams lost. TASSO & HARK 3 will take access now for 20-25 mins.
9:30 PKR start injection.
10:28 New fill ready at last. Start Run 12298
Standard Histograms taken during run 12298.
13:25 TASSO asked for new filling in 10 min.
14:21 New fill ready. Start run 12301

16.00 21/7/82. Rolf Felst & Fred Ledenyi.

16.15 Run 12302 ends. Herr Matsumoto replaces a DL8.
17.15 New fill at 17.30 : At start of run 12305, error 22 at console writes "False interrupt Level 12, Idet Code 0
20.35 Trig3 i/p missing ST 36, GP 3.
21.55 Trigger jammed level 2 — cleared O.K.
22.20 Beams lost.

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	T0 rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E>7.6GeV	T2 Bit 17 2T·E+·2tr.	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	∫Ldt Run	∫Ldt Exp.	IBM/TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks
12298	21/7/82	10.30	11.25	10.34	10.55	15.0 %	3204	10002	834	125	4425	11655	1099	3525	ON	ON	ON	8.45	27.08	11297.69	IBM	0.80	60%	332	14	17.300	
12299	"	11.25	12.29	8.66	8.84	11.6 %	3836	10002	998	115	4434	11423	1246	3078	"	"	"	7.63	29.27	11326.96	"	0.65	59%	354	13	"	
12300	"	12.29	13.37	7.13	7.30	9.0	4024	8775	1047	94	3887	1022/	1108	2336	"	"	"	6.05	24.34	11351.30	"	0.51	59	310	9	"	Beam dumped
12301	21/7/82	14.21	15.17	11.38	11.28	14.5	3285	10002	854	124	4439	11304	1222	3458	ON	ON	ON	9.36	30.76	11382.06	"	0.80	60	385	10	"	
12302	"	15.17	16.20	9.23	9.20	11.9	3753	10002	977	116	4440	11669	1266	3100	"	"	"	8.25	30.97	11413.03	"	0,65	60	378	6	"	
12303	IGNORE	——	DLB TIMEOUTS.																			0.50					
12304	21/7/82	16 35	17 33	7.21	7.22	9.3	3460	7474	900	83	3377	8666	1041	1918	"	"	"	6.21	21.48	11434.57	"	0,50	59	256	8	"	Beam dumped
12305	21/7/82	18.28	19.12	11.67	11.27	14.1	2607	8002	678	96	3519	8944	950	2586	ON	ON	ON	9.53	24.84	11459.35	IBM	0.83	59	330	5	17.300	
12306	"	19.13	20.03	9.83	9.55	12.1	2959	8002	770	93	3589	9457	1008	2595	"	"	"	8.12	24.04	11483.39	"	0.7	61	311	6	"	
12307	"	20 03	20 51	8.3	8.1	13.5	2863	8002	745	100	3416	9687	904	2645	"	"	"	6.87	19.66	11503.05	"	0.60	61	237	8	"	
12308	"	20 52	21 03	7.2	7.0	15	644	1863	167	25	783	2229	209	594	"	"	"	6.20	3.59	11507.04	"	0.50	59	50	1	"	Beam Dumped
12309	21/7/82	21.28	22.12	11.41	11.83	19.2	2576	8002	670	129	3553	9163	896	2709	ON	ON	ON	8.86	22.82	11529.86	IBM	0.85	61	280	14	17.300	
12310	"	22 13	22 27	9.4	9.3	14.6	459	1502	119	17	647	1691	189	503	"	"	"	8.70	3.89	11533.85	"	0.7	59	45	0	"	Beam lost
12311	21/7/82	23.11	23.51	11.46	11.75	17.3	2399	8002	624	108	3428	9336	870	2989	ON	ON	ON	9.09	21.80	11555.65	IBM	.85	61	227	12	17.300	
12312	"	23:52	0:36	9.61	9.90	14.4	2676	8002	696	100	3454	9482	941	2821	"	"	"	7.93	21.22	11576.87	"	0.75	60	269	12	17.300	
12313	22/9/82	0:~~37~~ 34																				0.66					I.D Timeout → stop only pedestal events
12314	"	0:59	1:08	7.91	7.98	25.4	616	1223	160	40	540	1484	147	384	ON	ON	ON	6.46	3.98	11580.85	IBM	0.60	60	44	3	17.300	
12315	"	1:15	2:03	7.29	7.56	17.8	2611	5605	679	120	2543	6594	698	1536	"	"	"	6.03	15.96	11596.61	"	0.58	60	203	3	"	Beam dumped
12316	"	2:35	3:17	11.42	11.61	15.9	2479	8002	644	102	3583	9122	882	2773	ON	ON	ON	8.75	21.69	11618.30	IBM	0.85	61	254	10	17.300	
12317	"	3:18	4:02	9.64	9.75	14.4	2651	8002	689	99	3607	9374	868	2775	"	"	"	8.11	21.49	11639.79	"	0.79	61	248	9	"	
12318	"	4:02	4:52	8.26	8.38	12.2	2888	8002	752	92	3520	9305	926	2559	"	"	"	7.27	21.00	11660.79	"	0,69	59	253	7	"	
12319	"	4:55	5:56	7.04	7.17	9.2	3671	8002	955	87.4	3606	9396	1045	2188	"	"	"	6.13	22.50	11683.29	"	0.55	59	310	9	"	
12320	"	5:57	6:04	5.89	6.01	8.1	394	733	102.3	8.3	305	933	82	221	"	"	"	5.31	2.09	11685.38	"	0.45	60	20	0	"	beams dumped
12321	"	6:32	7:14	11.50	11.54	15.9	2495	8002	649	103	3588	9236	903	2804	ON	ON	ON	8.74	21.80	11707.18	IBM	0.90	61	267	8	17.300	
12322	"	7:14	8:01	9.67	9.71	13.4	2776	8002	722	97	3608	9414	941	2655	"	"	"	7.69	21.35	11728.53	"	0.76	61	257 ~~225~~	11	"	beams lost
12323	~~Cosmic run~~		8.17	8.27	8.33	13.4	913	2501	237	31.8	1111	2924	273	774	"	"	"	7.30	6.67	11735.20	"	?	61	84	3	"	↓
12324 328 326	Cosmic run	"																									
12327	22/9/82	11:08	11:50	9.76	9.71	15.9	2375	8002	618	98	3069	7729	810	2124	ON	ON	ON	9.16	21.75	11756.95	IBM	0.75	61	258	6	17.300	
12328	"	11.51	12.36	9.74	9.70	27.2	2687	8002	700	190	3125	7695	797	2097	"	"	"	6.93	18.62	11775 57	"	0.75	60	228	8	"	beams lost
12329	"	12.37	12.43	8.42	8.39	14.8	354	1253	92	136	498	1136	123	294	"	"	"	7.41	2.62	11778.19	"		~~54~~ 60	41	0	"	↓
12330	"	17 44	18 34	11.32	10.80	16.3	2937	8002	765	125	2688	10819	1000	3177	ON	ON	ON	8.11	23.81	11802.00	IBM	0.90	62	285	11	17.300	
12331	"	1835	1929	9.36	8.93	12.1	3217	8002	838	102	2860	10828	1035	2773	"	"	"	7.05	22.66	11824.66	"	0.80	62	276	9	"	

Run	Date	Start	Stop	at Run Start I_+	at Run Start I_-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	To rej. $\times 10^6$	T_1 Acc. Sum.	T_2 Acc. Sum	T_1 Bit 2 $E_1 \geq 6$ GeV	T_2 Bit 17 2T · E4 · 2tr.

ON/OFF N50	MIP	TOF	<L> $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp.	IBM /TAPE	BP [V]	T_2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

22. July 1982

Sum 21.7.82 $\int Ldt$ = 503
MH = 194

0°° H. Takeda and H. Riesberg
"Everything is working well" (obviously due in large part to the very efficient previous shift!).

1°° RUN 12314 DL8 Timeout many times
Branch 6 crate 5 I.D. Ring 3. → stop run.

1 14 Run 12315 started
The dip in the wire maps for DL8 # 178 (wires 1424-1431) was due to a very loose LAM-grader cable.
The time-outs in the same crate (crate 5 of branch 6) are produced by DL8 # 177 which (probably) was exchanged last evening by H. Matsumura. Cleaning of contacts improves a little, but finally I exchange the DL8 # 177 again after the run

2°° stop for beam dump
2 30 New fill ready
2 35 start run # 12316
4 02 start run # 12318. At start YVOLTS: Error in L6 - System initialisation, skip L6 check ---- HV read error. PAUSE / Continue → 02

5.56 Start run 12320
6.01 DOWN for beam dumps.

Exchange of DL8 # 36. Since yesterday morning (21.7.82) all amplitudes of this unit were maximum (=4095).

6.28 New filling ready!
6.30 Run 12321 started
6:52 YSPY error: Trigger 3 I/P missing ST 29 GP 2. Histogram looks ok
7:14 Run 12322 started.
7:45 YSPY detected error Trigger 3 I/P missing: ST 29 Gp 2 ST 36 Gp 3
Any serious hole could not be seen in Trigger 3 Input map

9 05 Magnet ausfall (Petra?), Start 18°°, Petra Hauptmagnet
Start cosmic run.
8°° Naraoka Nozaki
10°° Umemiya ⇆ Nozaki
11 20 I.D. trip
11.27 Nozaki back

11.28 Trigger box hangs up. Error level 3.

12.50 beams lost, Air conditioning switched off for some ~~urgent~~ repair.
after 5 min 23° in electronics part, switch off DL8 and L6 crates.

13.10 It's on again, temperature going down fast.
Noticed that deadtime was high during last 3 runs. I took out the trigger bit 4 (FWHM · L6) to see the effect. (left out).
But the highest rate was the old FWHM trigger during the last run.

14°° Rowe takes over from Nozaki.

16.00 22/7/82 Sachio Komamiya & Fred Loebinger

17.45 Level 5 trigger hang up. — Cleared O.K.
19.55 Beams lost
Vacuum trouble in Synchrotron — Restart 21.00 "?"
↳ 21.45 "?"
↳ 22.15 "?"
↳ 24.00 "?"
22.15. SO run magnet down to 500 A.

24 03
00°° 23/7/82 Marshall and Petersen

Restart ✓ 24°° message disappears at 1 min past midnite but PKR cannot issue an update! We wait

~~1°°~~ 02°° Start & inject.
3 10 Attempts to inject end with kurze Unterbrechung
4 25 still trouble with RF

08:00 Glendinning & Takeda
9.13 current in the machine! - fingers crossed.
11:36 Now its a short break .... but at least there 12 mA in each beam at 6.9 GeV.

Run	Date	Start	Stop	at Run Start I^+	at Run Start I^-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	To rej. $\times 10^6$	T_1 Acc. Sum.	T_2 Acc. Sum	T_1 Bit 2 E>7.6 GeV	T_2 Bit 17 2T·E4·2tr.
144 RUN				RUN START mA	mA									
12332	22.7.82	19:30	19:56	7.69	7.59	10.3	1579	8002	411	42	1128	4859	420	~~5868~~ 1120
12334	23.7.82	18:01	18:50	11.40	11.35	15.1	2795	8002	727	110	2843	10378	1090	3046
12335	"	18:51	19:40	9.5	9.5	13.3	2920	8002	760	101	2811	10673	977	3015
12336	"	19:41	20:29	8.10	8.10	10.6	3479	8002	905	96	2910	10667	1073	2607
12337	"	20:40	21:37	6.84	6.84	10.1	3461	7867	900	91	2827	10297	1037	2373
~~12338~~														
~~12339~~														
12339	22.7.82	22:12	23:01	11.24	11.06	14.1	2897	8002	754	106	2753	11012	999	3221
12340	"	23:55	23:56	~~8.03~~ 9.43	9.31	11.8	3252	8002	846	100	2644	11049	965	3071
12341	24.7.82	23:57	0:23	7.32	7.25	10.5	1543	3973	401	42	1254	4468	432	1078
12342	"	0:47	0:52	6.83	6.76	8.6	259	625	67	6	202	675	77	160
12343	"	1:03	2:03	6.63	6.56	~~7.8~~	3588	6269	933	72	2423	8378	900	1718
12344	"	3:43	4:42	8.83	8.46	14.1	3446	8002	897	126	2640	11359	1002	2842
12345	"	4:43	5:45	7.48	7.17	10.4	3692	8002	961	100	2640	11460	982	2695
12346	"	5:46	5:47	6.42	6.14	10.1	44	101	11	1	34	130	13	136
12347	"	7:38	8:30	11.34	11.38	13.2	2857	7400	738	97	2679	9889	941	2810
12348	"	8:56	9:47	11.46	11.60	22.7*	3021	8002	786	179*)	2702	10424	988	3041
12349	"	9:47	9:58	~~9.81~~ 9.31	9.45	14.5	615	2001	166	22	555	2216	207	623
12350	"	10:07	10:11	8.71	8.85	13.9	236	607	61	8	222	766	94	196
12351	"	10:19	11:17	8.37	8.51	10.6%	3456	8002	899	95	2868	10637	1082	2658
12352	"	11:17	12:02	7.01	7.16	9.1	2647	5476	688	63	2031	7198	749	1582
12353	"	12:29	13:15	11.60	11.50	16.4	2735	8002	712	117	2688	10886	1057	3382
12354	"	13:15	14:06	9.68	9.64	15.9	2996	8002	779	124	2704	10854	1039	3217
12355	"	14:06	15:14	8.18	8.15	13.5	3541	8002	921	124	2819	10812	1067	2736
12356	"	15:15	15:33	6.66	6.67	9.8	1053	2232	274	26.7	752	2999	288	707
12357	"	16:04	16:55	11.56	11.50	20.4	2872	8002	748	153	2658	10418	1027	3088
12358	"	16:55	17:15	9.39	9.45	16.4	1104	3015	287	47.0	1070	4076	400	1199
12359	"	17:44	18:39	11.51	11.23	12.2	3186	8002	829	101	3221	8890	1214	2685
12360	"	18:39	19:33	8.90	8.41	15.4	3155	8002	821	127	2747	10968	1035	3004
12361	"	~~20~~ 19:34	20:26	7.48	7.07	14.2	2928	8002	762	108	2347	11426	864	3149
12362	"	20:26	20:33	6.43	6.04	10.9	368	878	96	10	279	1187	111	278
12363	"	21:09	22:00	9.10	8.75	13.7	2996	8002	779	106	2903	9998	1099	2867
12364	"	22:00	22:52	9.08	8.73	12.5	3106	8002	808	101	2793	10946	1023	2941
12365	"	22:53	23:05	7.67	7.37	10.9	663	1558	173	~~819~~	586	2021	218	491
12366	25.7.82	0:00	0:09	6.35	6.10	19.1	359	955	94	18	235	1202	87	385

Run	ON/OFF N50	MIP	TOF	<L> $\times 10^{30}$	$\int$Ldt Run	$\int$Ldt Exp.	IBM/TAPE	BP [V]	T_2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks
145													
12332	ON	ON	ON	6.40	10.10	11834.76	IBM	0.7	61	115	1	17300	Beams lost
12334	ON	ON	ON	8.96	25.06	11859.82	IBM	0.84	56	304	12	17300	
12335	"	"	"	7.65	22.34	11882.16	"	0.85	61	248	5	"	
12336	"	"	"	6.40	22.25	11904.41	"	——	55	279	10	"	
12337	"	"	"	5.19	17.97	11922.38	"	0.67	55	219	5	"	
~~12338~~	ON	ON	ON	~~8.21~~	~~23.77~~	~~11946.15~~	IBM	1.0	/				JUNK RUN
~~12339~~	"	"	"	8.21	23.77	11946.15	"	0.9	55	286	7	17.30	
12340	"	"	"	6.05	19.68	11965.83	"	0.78	55	246	3	"	
12341	"	"	"	6.44	9.93	11975.76	"	0.63	46	123	3	"	DL8 trouble
12342	"	"	"	5.74	1.49	11977.25	"	0.60	47	15	0	"	" " Run without it
12343	"	"	"	4.74	17.01	11994.26	"	0.51	60	210	3	"	Beams dumped
12344	"	"	"	5.14	17.70	12011.96	"	0.85	62	228	9	"	
12345	"	"	"	4.08	15.05	12027.01	"	0.90	62	170	6	"	
12346	"	"	"	4.41	0.20	12027.21	"	0.90	65	4	0	"	Beams dumped
12347	"	"	"	8.86	25.14	12052.35	"	0.91	62	286	8	"	Beams lost
12348	ON	ON	ON	7.92	23.91	12076.26	IBM	~0.9	60	275	12	17.300	*) high deadtime due to trigger heavy ups
12349	"	"	"	8.15	5.01	12081.27	"	0.80	45	58	1	"	
12350	"	"	"	7.26	1.71	12082.98	"	0.75	61	26	1	"	
12351	"	"	"	7.04	24.31	12107.29	"	0.72	60	287	9	"	
12352	"	"	"	5.72	15.14	12122.43	"	0.62	60	204	6	"	Beams dumped
12353	"	"	"	8.58	23.47	12145.90	"	0.95	62	308	20	"	
12354	"	"	"	7.20	21.58	12167.48	"	0.82	60	283	10	"	
12355	"	"	"	5.97	21.12	12188.60	"	0.74	~~60~~ 61	283	1	"	
12356	"	"	"	5.19	5.47	12194.07	"	0.63	58	56	3	"	beams dumped
12357	ON	ON	ON	7.69	22.08	12416.15	"	0.96	~~56~~ 61	280	7	"	
12358	"	"	"	7.83	8.64	12424.79	"	0.82	62	95	2	"	with YVOLTS error / beams lost
12359	"	"	"	8.26	26.31	12451.10	"	0.82	~~56~~ 61	349	11	"	
12360	"	"	"	6.75	21.31	12472.41	"	0.72	62	258	6	"	
12361	"	"	"	5.38	15.76	12498.17	"	0.62	~~56~~ 63	168	11	"	once paused by BP high current
12362	"	"	"	4.83	1.81	12499.98	"	0.65	~~56~~ 61	27	1	"	
12363	"	"	"	7.92	23.72	12523.70	"	0.92	61	297	4	17.300	once HV(chamber) down
12364	"	"	"	7.09	22.02	12545.72	"	"	61	257	12	"	
12365	"	"	"	6.37	4.22	12549.94	"	0.72	~~62~~ 62	55	4	"	ID HV down
12366	"	"	"	4.63	1.66	12551.60	"	0.70	57	22	2	"	beam lost

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E>76GeV	T2 Bit 17 2T·E>2tr

14:00 Get beam at last, try to start run 12333 but get error, NORD50 busy. Paused but was still taking pedestals, so run terminated itself. Tried to start again – got the following messages on the command terminal:

Memory out of range at 101236

101236 / 141631 30012 LDR 13, 6012, 03, 14

Memory out of range

last start address	152165
last memory reference address	377655655 10
last data to/from memory	245405 00001
Breakpoint register1 (BP)	677140
Breakpoint register2 (BQ)	100000

Break conditions set:

/Parity error / Store Reference/

*EXIT

14:03 beam lost anyway!

14:10 tried a Muon-test run. Got an for an Trigger Action override? when gave null response got

100353 STOP 0

– STOP 0 – AT 001317 –

×EXIT

14:12 phoned Gordo, he says re-load nord. Have to wait for the magnet to run down.

14:25 reloaded NORD and tried a Muon-test: seemed OK – noticed that the NORD50 had been in the STOP state until NSDAR was loaded.

14:34 run magnet back up to 5000 A – injection again.

15:00 We can't control magnet current. "Servo limit lamp" is always ON. Called K-people. Short break again.

16:00 Dittmann & Takeshita on shift

16:30 We have a magnet problem. We cannot control when lowering or raising the magnet current. K-group cannot repair the problem.

Keep the magnet at 7500 A until further notice from K-group

27.7.82: It is again possible to run the magnet up and down RDH

Run	Date	Start	Stop	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	SLdt Run	SLdt Exp.	IBM/TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

18:00 Run 12314 start

18:18 Jet chamber HV down by over current

22:10 Run 12338 FAILED LG HV READ ERROR – we stopped THIS RUN. : JUNK RUN

22:12 " 12359 MUON CREATE 4 is MISSING – we pushed the Reset ~~SW~~ on Muon Create (#4 module)

Saturday 24/7/82

Petersen & Rowe on Shift

00 08 DL8 missing response. #94. Wires 752–760. #95 is also low. See list in folder.

We try fiddling about with the DL8's (rubber treatment etc). This works for #95, but not for #94. Call expert. Meanwhile run with #94 as it is. Heinzelman comes. Replaces DL8 #94. OK now.

2 05 new filling the new filling starts with high background. We asked PKR to optimize the beams again. It takes a long time to get less than 1V BP.

8 00 A Finch and H. Riesebeg on shift.

8 14 Pause for repair ~~exchange~~ of μ-digitizer (PR. Rowe)

8 29 Beam lost, ID trip

8 51 New fill ready Cable # 22 taken out from BP ~~integrator~~ Ratemeter

8 55 Run # 12348 started

9 10 Trigger hang-up on level 5. Push NORUN and RUN → OK

9 47 Run # 12349 started

9 58 DL8 problem – Run # 12349 stopped – tried cleaning contacts on wires 128, 129, 130

10 07 Run # 12350 started – DL8 problem remains

10 11 Run 12350 stopped – look inside 129 – a Riesebeg will try and mend it during next filling – continue without it.

10 18 Run 12351 started DL8 problem (dead channels or Wire map) goes away anyway!

11 16 Run 12351 ended, Run 12352 started – Y VOLTS ERROR

12 00 Run 12352 ended – beam disappears

12 25 New fill ready. Start R 12353

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E>76GeV	T2 Bit 17 2T·E>2tr	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	SLdt Run	SLdt Exp.	IBM TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

24.7.82 contd.

14⁰⁰ We have frequent IBM BUSY Runs 12354, 12355
15³⁰ Stop R 12356 for beam dump
15⁵⁹ New filling ready

16:00 Kanzaki & Takashita on shift
16:13 Jet chamber HV down (R12357)
16:36 "No Trigger ...". Checked Trigger Panel. ⇒ Level 5.
We followed the instruction from Herr. Krahbiel.
16:55 Start run 12358 with YVOLTS error
17:15 Beams lost. (I.D. tripped).
17:40 New filling ready.
18:19 Run 12359 we found Jet chan HV was down. Beam pipe current 0.80
19:10 Run 12360 "No trigger ..." checked Trigger Pannel ——— Level 5 error
Sometimes JDAS READOUT ERROR 44 - TIMEOUT Branch 2 crate 5 : Lead glass ADC's happen.
20:19 Run 12361 Run paused by BP high current & Jet chamber HV down.
21:05 New filling ready.
21:30 RUN 12363 Jet chamber HV down quietly. ← this means, a cable was ~~thrug~~ pulled out.
23:10 Jet chamber HV(- INPUT ERROR) alarm. no alarm RUN 12365 pause — stop : we can't switch on HV of I.D.
23:20 We telephoned to Rieseberg. He'll come soon. (we tried several times but failed)
23:57 Rieseberg coming and I lower the ITV threshold from 0.445 → 0.378 (ch) (tentatibly) He will repair ~~the other day.~~

0:01 Run 12366 paused by high background. BP 2~3

25.7.82

0⁰ ~~Odaka~~ and Feist on shift

I will leave DESY tomorrow morning to go back to Tokyo. Then this shift is the last one for me.
I hope no trouble will happen. ODAKA How is your electron inclusive ?

oc ↕ strong coupling

1:05 'No Trigger' The ~~usual~~ usual procedure helped it. (PAUSE → ~~RE~~EVENT RESET → RESET RUN → START RUN → CONTINUE)
:08 ID trip ··· Anod Current & HV output
3:40 The beams are dumped for a new fill.
4:00 New Fill & HV on
:35 ID trip ··· Anod Current & HV Output.
:47 'JETCH HIGH CURRENT' faulty part 93
This was Odaka's last shift before going home to Tokyo, he got the honour of being a ~~light~~ shiftleader.

8⁰⁰ H. McCann and H. Rieseberg on shift

Just new fill ready and R 12374 started

10⁴⁷ Beams dumped
11⁰⁷ New fill ready, R 12377 started Only 20 min !
12⁰⁸ IBM busy. IBM ERROR 54 R 12378 stopped
12¹⁵ Start Run 12380 on tape
14²⁴ Run 12382 started, output again to IBM Luis
14³² Stop for beam dump.
This was not a good idea to ask for a refill ½ h before the end of the PKR shift.
15⁵⁵ Still no Beams

16⁰⁰ Clarke & Komamiya on shift.
17⁰¹ 'short break'
: still short break
19,15 RF problem diagnosed

22 32 Beams on, large backgrounds upto 6V on b.p. scale.
22 40 High background ~1.2 V ask PKR for beam optimization.
22 45 Beams lost.
23 05 New beams ready, high background ~1.3 ask PKR for orbit corrections
Background down to ~0.9 V, but fluctuating slightly
26.7. 23.54 ~~I.D trip, sudden increase in backgrounds.~~
0⁰⁰ Kanzaki & Wicht (the last shift on DESY for both of us!)
We ask PKR to decrease background (~1.3 at the moment).
0:15 ~~New~~ background is "down" to 0,8 (~9 mA/beam) — we try to continue.
1:20 When we started run 12385, we got YVOLTS error on the printer.
Stopped this run and started run 12386.
Now we are swamped in time-outs branch 6, crate 1
1:35 On Rieseberg's advice we run without DL8 #147, wires 1176-1183
1:40 Got "Muon Crate Missing #12" but couldn't reset it in the hardware room.
Went down to the hall ~~—~~ to reset it.
1:58 "NO TRIGGER ..." Trigger box hung up on "Level 5".
4:15 At last we can start data taking. But run 12388 starts with YVOLTS error. We kill it.
4:18 "Muon Crate Missing ; 10" Reset in the HW room.

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	T0 rej. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 Bit 2 E1>6GeV	T2 Bit 17 2T·E4·2tr.	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	∫Ldt Run	∫Ldt Exp.	IBM/TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks
12367	25.7.	0 48	1:35	10.74	10.90	19.3	2495	8002	648	125	2254	10247	~~852~~ ~~11709~~	~~14709~~ 3478						(12551.60)							
12368	"	1:35	2:28	9.06	9.26	11.9	3143	8002	817	97.1	2620	10117	1015	2827	ON	ON	ON	6.93	17.28	12568.88	IBM	1.0	57	205	8	17.300	
12369	"	2:28	3:29	7.70	7.89	9.5	3630	8002	944	89.5	2650	9927	996	2537	"	"	"	6.28	19.74	12588.62	"	0.9	56	256	11	"	
12370	"	3:29	3:41	6.49	6.68	8.2	691	1348	180	14.7	479	1665	176	411	"	"	"	5.45	19.77	12608.39	"	0.63	54	246	4	"	
12371	"	4:33	5:30	10.17	10.26	13.9	2846	8002	740	103	2572	9944	963	2878	"	"	"	4.77	3.29	12611.68	"	0.52	56	40	1	"	Beams dumped.
12372	"	5:30	6 31	8.3	8.3	11.7	3580	8002	933	109	2860	10907	1072	2865	"	"	"	7.57	21.54	12633.22	"	1.0	56	261	13	"	
~~12373~~	"	6 31	~~7 28~~	6.9	6.9	8.5	3342	~~6428~~	869	74	2375	8698	880	2029	"	"	"	6.34	22.75	12655.97	"	0.7	61	263	8	"	
12374	"	7 58	8 45	11.67	11.56	16.2	2783	8002	724	117	2608	11208	947	3808	"	"	"	5.23	17.48	12673.45	"	0.6	60	209	3	"	
12375	"	8 46	9 45	9.79	9.74	13.8	3093	8002	805	111	2722	11136	996	3441	ON	ON	ON	7.79	21.68	12695.13	IBM	~1.0	62	245	6	"	
12376	"	9 45	10 47	7.55	7.49	9.8	3643	7653	948	92	2738	10373	1012	2547	"	"	"	6.88	21.28	12716.41	"	0.92	61	250	12	"	
12377	"	11 09	11 58	11.43	11.57	13.8	2900	8002	755	104	2831	10254	1089	2966	"	"	"	5.18	18.87	12735.28	"	0.70	60	258	9	"	
12378	"	11 59	12 09	9.48	9.65	13.9	639	1801	166	23	605	2379	232	686	"	"	"	8.21	23.82	12759.10	"	1.05	61	322	10	"	
12380	"	12 15	13 "	8.90	9.07	11.4	3301	8002	859	98	2932	10531	1098	2829	"	"	"	7.66	4.89	12763.99	"	0.88	59	71	3	"	Stopped due to IBM trouble / No Run 12379 / IBM problems
12381	"	13 14	14 21	7.35	7.51	9.0	3919	8002	1019	92	2953	10455	1063	2347	"	"	"	7.38	24.35	12788.34	TAPE F11059	~0.80	60	314	20	"	
12382	"	14 25	14 32	6.02	6.17	7.7	432	810	112	8.7	295	1018	113	223	"	"	"	6.25	24.48	12812.82	F11130	0.67	58	259	8	"	
12383	"	23.20	0:24	10.92	11.18	14.7	2861	8002	744	109	2723	10763	1007	3115	"	"	"	5.20	2.25	12815.07	IBM	0,53	58	25	1	"	Beams dumped
12384	26.7.	0:24	81:30	8.74	9.00	12.0	3218	8002	837	100	2737	10854	970	2693	"	"	"	7.74	22.14	12837.21	IBM	1.0	62	270	10	"	
12385		—	Junk —												"	"	"	7.02	22.59	12859.80	"	0.85	62	256	11	"	
12386	"	1:21	1:26	7.36	7.61	60.6	252	269	66	40	87	360	28	85													4VOLTS error.
12387	"	1:37	2:35	7.03	7.27	12.2	3415	7335	888	108	2555	10133	950	2459	"	"	"	2.61	0.66	12860.46	"	0.70	63	7	∝	"	DL8 problem
12388	"		no	results	: beams	lost	when	run	started						"	"	"	5.44	18.57	12879.03	"	0.70	61	225	6	"	Beams dumped
12389	"	—	Junk —																								Beams lost
12390	"	4:16	5:10	10.92	10.95	12.7	3177	8002	826	105	2806	10850	1048	3279													4VOLTS error.
12391	"	5:10	6:12	8.91	8.96	10.3	3679	8002	956	98	2867	11025	1081	3134	"	"	"	7.66	24.33	12903.36	IBM	0.85	61	285	9	"	
12392		—	junk —												"	"	"	6.53	24.03	12927.39	"	0.70	61	275	3	"	
12393	"	6:21	7:20	7.21	7.26	8.4	3520	6556	915	77	2541	8838	885	2229	"	"	"	5.59	19.68	12947.07	"	0.55	60	249	10	"	Beams dumped
12394	"	7:55	8:45	11.00	10.95	13,9	2971	8002	773	107	2830	10289	1051	2797	"	"	"	8.47	25.15	12 972.22	"	1.0	61	327	11	"	
12395	"	8:46	9:40	9.07	9.06	11.8	3218	8002	838	99	2908	10516	1108	2735	"	"	"	7.91	25.47	12 997.69	"	0.82	60	354	10	"	
12396	"	9:40	10:43	7.59	7.61	9.5	3764	8002	979	94	3040	10481	1096	2406	"	"	"	6.76	25.44	13023.13	"	0.67	60	311	12	"	beams dumped
12397	"	11:13	11:42	11.28	11.46	13.5	1488	3912	388	52	1383	5169	487	1529	"	"	"	8.53	12.70	13 035.83	IBM	1.05	62	131	4	"	beams dumped because of partial et loss
12398	"	12:46	12:46	13:37	11.76	11.26	3057	8002	795	105	2911	10403	1083	2957	"	"	"	8.97	27.42	13063.25	"	0.90	61	339	15	"	beams lost.
12399	"	14:48	15 44	11 54	11.54	1940	3172	8002	825	160	2874	10317	1072	2889	"	"	"	8.61	27.30	13090.55	"	0.90	61	314	9	"	
12600	"	15,11	16,52	9,33	9,38	10.9	3411	8002	902	98.5	2949	10642	1103	2769	"	"	"	7.22	25.01	13115.56	"	0.7	61	296	11	"	

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 Bit 2 E1>6GeV	T2 Bit 17 2T·E4·2tr.

ON/OFF N50	MIP	TOF	<L> ×10³⁰	SLdt Run	SLdt Exp.	IBM TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

26.7. end

4:35 Reset missing μ-crate #3 in Rucksack (not possible from hardware-room)
6:10 at start of Run 12392: "error in LG-system initialisation"
when stopping that run: NORD hang-up, command terminal blocked. Cured by reloading NORD

7:45 New fill ready
7:55 Start Run 12394, with DL8 # 147 replaced.

8:00 End of the last shift of Junichi Kanzaki and of Henning Wriedt !

8:00 PR. Roese and H. Rieseberg on shift.
8:20 Trigger hang up. Level 2. ~~Restart~~ Pause, Reset Ev., Reset Run → OK.
JDAS Readout error 44 — Timeout Br2 Cr. 5 : LG ADC's

10:43 End of Run 12396 and beam dumps
11:10 New fill ready
11:13 R 12397 started. At start: YVOLTS : Error in LG-System Initialisation
11:35 ID trip loss of 50% of positrons
11:42 stop for new fill
12:40 New fill ready, R 12398 started
The luminosity is high $L_{ungated} \approx 1.06 \times 10^{31}$, unfortunately deadtime 15%
13:55 Try to start new run. The screen just shows 'waiting for IBM link'. The keys of control terminal have no effect. See that NORD has hung on level 1 (with a few 3's thrown in). Reload → OK.
13:40 Short break. — D. Cords works at the Nord
14:44 New fill ready
14:47 Start Run 12399 At start: Error 22 at ~~13417~~ 1244; False interrupt level 12(10), Idat code 0(8)
15:00 Trigger hang up: level 5. Cured by Krehbiels recipe.
15:25 Standard histo taken — JETC wire map has several more noisy wires.
15:55 Slow ID/MU tank pressure. OK after resetting.

26.7.
16.00 Heuer & Clarke (unfortunately not our last shift)
17.25 several ID slow trips due to high background(-fluctuations); PKR recognized and works on it
17.50 same as 17.25
20.15 Trigger hang up level 6: green lamps RUN on, all triggers on T1 postpone. Pressing Stop, restart, Run helped.
20.30 Std histograms look ok
21.15 Same as 20.15

27/7/82 0h:00 Hellenbrand + Offenbinning
0:08 Trigger box hang at level 5. Reset OK.
0:35 Ditto - after 7997 events!
1:32 again level 5
7:48 beams lost, ID trip
4:13 Beam again after long "short" break.
5:00 Notice some bumps in LG hit map barrel I - assume it's just due to the low threshold Oberon requested. - maybe someone can ask about this during the day.

8:00 Cords + Heuer
13:00 ~~Two~~ Two-Bunch operation with high currents (~10mA each) is not easily possible.
Therefore Degele decided to run with 4 bunches and separated beams.
The background is fairly high at beginning of a new fill, but PKR optimizes efficiently.
IBM jam keeps us from taking data. When IBM is up, we still can't get access. Therefore reload Nord.
13:40 dead time ~16%, 5 Hz trigger rate (incoming), mainly given by the T2-triggers.
14:00 10-trip, anode current
14:30 Std histograms checked
14:35 Trigger hang up level 6: green lamp on, all triggers on T1 postpone
followed by Timeout T2, C5: LG

→ Please take data of the vacuum (Getterpumps and integrale Pumpen) at the beginning and at the end of a fill.

16:00 P. Dittmann and H. Rieseberg
Run 12419 in progress
$I^+ = 7.5$, $I^- = 7.0$ mA, Beam life time ~11.5 h, Trigger rate ~3.7 Hz

17:08 Command-Terminal hangs: switch off/on power helps (description at the terminal)

Run	Date	Start	Stop	at Run Start I_+	at Run Start I_-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	To rej. $\times 10^6$	T_1 Acc. Sum.	T_2 Acc. Sum	T_1 Bit 2 $E_1 > 6$ GeV	T_2 Bit 17 $2T \cdot E_{tot} \cdot 2tr.$	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp.	IBM/TAPE	BP [V]	T_2 Rej. Ev. Fr. (%)	Bhabha	MH	E_b	Remarks
12401	26.7.82	16.52	18:4	7.58	7.66	8.9	3925	8002	1021	91.1	3104	10240	1148	2263	ON	ON	ON	6.47	25.39	13160 ,95	IBM		60	317	14	17.300	
12402			early	12 Pedestalevents																						beams dumped
12403	"	20.00	20.52	11.22	10,92	15.2	3085	8002	803	122	2885	10459	1101	2947	ON	ON	ON	8.26	25.48	13166,43	IBM	.85	62	347	5	17.300	
12404	"	20.52	21.53	9.11	8.89	11.2	3509	8002	913	102	2951	10516	1102	2595	ON	ON	ON	7.11	24.94	13191.37	IBM	0.65	61	323	12	17,300	
12405	"	21.53	23.02	7.52	7.35	8.7	4111	8002	1069	928	3075	10699	1068	2496	ON	ON	ON	5.99	24.64	13216.01	IBM	0.5	61	295	10	17,300	beams dumped
12406	4	23.50	0:38	11.39	11.28	18.5	2792	8002	726	135	2625	10671	994	3145	ON	ON	ON	8.05	22.48	13238.49	IBM	.95	63	253	13	17.300	
12407	27/7/82	0:38	1:28	9.56	9.57	13.7	2976	8002	774	106	2485	11202	893	2970	"	"	"	6.55	19.50	13257.99	"	0.98	63	273	9	"	
12408	"	1:28	1:52	8.27	8.16	14.4	1368	3396	356	57	1111	4720	410	1752	"	"	"	6.26	8.56	13266.55	"	0.88	63	112	0	"	beams lost
12409	"	4:13	4:59	11.38	11.38	14.9	2735	8002	711	106	2577	10578	907	3004	"	"	"	8.38	22.91	13289.46	"	0.95	63	256	7	"	
12410	"	4:59	5:51	9.52	9.5	12.6	3043	8002	791	99	2655	10716	1000	2580	"	"	"	6.99	21.28	13310.74	"	0.90	62	288	9	"	
12411	"	5:50	6:46	8.11	8.12	11.3	3267	8002	850	96	2696	10714	978	2464	"	"	"	5.95	19.43	13330.17	"	0.83	62	234	10	"	
12412	"	6:46	7:23	6.94	6.96	11.2	2187	5261	569	64	1586	7806	572	1725	"	"	"	4.86	10.62	13340.79	"	0,83	61	134	0	"	beams dumped
12413 – 12415		ID – Pulser Runs on tape																								
		START DATA TAKING WITH 4 BUNCHES AND SEPARATED BEAMS																								
12416		lost due to IBM problems																								
12417	27.7.82	13.33	14.32	10.6	10.2	12.4	3419	8002	891	119	1828	13123	592	4246	ON	ON	ON	0.0	0.0	0.0	IBM	0.9	64	0	0	17.3	
12418	27.7.82	14.32	15.44	9.1	8.7	11.2	4119	8002	1072	121	1841	12954	608	3546	ON	ON	ON	—	—	—	"	.78	63	0	0	17.3	
12419	27.7.82	15.45	17.05	7.9	7.4	8.4	4772	8002	1243	104	2176	12597	687	2774	"	"	"	—	—	—	"	.65	62	0	1	"	
12420	"	17:11	18:39	6.94	6.53	7.2	5291	8002	1378	100	2328	12309	743	2380	"	"	"	0.00	0.01	—	"	—	62	0	1	"	
12421	"	18:40	20:15	6.15	5.80	6.7	5200	7215	1354	91	2228	10927	669	2016	"	"	"	0.00	0.00	—	"	0.52	62	0	0	"	beams dumped
12422	"	20:38	21:28	11.53	11.50	17.7	2962	8002	771	137	1660	13867	583	5479	"	"	"	0.00	0.00	—	"	1.1	64	0	1	"	
12423	"	21:29	22:32	9.84	9.80	13.1	3609	8002	940	123	1869	13881	653	4634	"	"	"	0.00	0.01	—	"	0.95	63	0	0	"	
12424	"	22:32	23:50	7.46	8.29	9.5	4645	8002	1209	115	2047	13215	703	3492	"	"	"	-0.01	-0.03	—	"	0.70	62	0	0	"	
12425	"	23:50	0:06	6.62	7.36	11.0	907	1700	235	26	430	2732	116	853	"	"	"	0.00	0.00	—	"	0.72	61	0	0	"	IBM machine trouble. New fill asked.
12426	28/7/82	1:44	2:42	11.55	11.48	14.5	3395	8002	883	127	1726	13541	602	4739	"	"	"	-0,01	-0,04	—	"	1.0	64	0	0	"	
12427	"	2.43	3:49	9.66	9.57	11.0	4002	8002	1041	114	1978	13282	649	3878	"	"	"	-0.01	-0,02	—	"	0,85	68	0	0	"	
12428	"	3:50	5:07	8.60	8.32	8.9	4616	8002	1200	107	2164	12824	706	3240	"	"	"	0,00	-0,01	—	"	0.7	62	0	0	"	
12429	"	5:07	5:27	7.43	7.36	6.5	1173	1591	305	19	447	2533	127	517	"	"	"	0,00	0,00	—	"	0,6	62	0	0	"	Beams dumped
12430	"	5:55	6:49	11.74	11.27	16.5	3119	8002	811	133	1591	13867	522	4968	"	"	"	0,00	0.01	—	"	1.0	64	0	0	"	
12431	"	6:49	8:01	9.83	9.50	11.1	4032	8002	1049	116	1886	13122	623	3826	"	"	"	0.00	0.01	—	"	0,85	65	0	0	"	
12432	"	8:05	9:09	7.79	7.7	6.2	3840	5193	1000	62	1591	7921	481	1588	"	"	"	0.0	0.01	—	"	0.8	61	0	1	"	Beams dumped
12433	"	11.57	12.36	11.08	11.29	13.4	3479	8002	906	121	1778	13701	593	4181	"	"	"	0.0	0.01	—	"	0,9	64	0	0	"	
12434	"	12.36	13.46	9.18	9.37	10.0	4202	8002	1094	109	2064	13053	647	3295	"	"	"	0.0	0.01	—	"	0,78	62	0	0	"	
12435	"	13.47	15.11	7.36	8.12	11.4	5005	8002	1304	149	2197	12629	701	2858	"	"	"	0.0	0.00	—	"	0,55	61	0	0	"	
12436	"	15.11	15.59	6.95	7.05	7.3	2817	4336	733	53	1275	4510	423	1385	"	"	"	0.01	0.03	—	"	0,5	61	0	0	"	

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E₁≥66eV	T2 Bit 17 2T·E₄·2tr.	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	SLdt Run	SLdt Exp.	IBM/TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

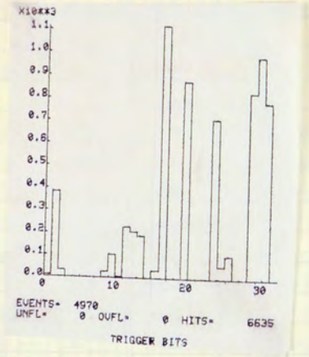
2 Tage

27.7.82

20⁰⁰ It turns out that JADE should coordinate, since PLUTO has nobody on shift.
We don't know, what to do. Shall we have high currents, ~~currents?~~ as usual.
~~He should switch off~~ according to R. Felst.
We shall run 2 days with separated beams, in order to measure the background for the total neutral reaction $\gamma\gamma \to \pi^0, \eta$.

20³⁰ New filling. It seems not to be true that the rate is higher now than in Lumi runs (see comment p. 153).
We have at 11.5 × 11.5 mA 4.9/sec before HPPROC, 2.4/sec at Nord
This is less rate than in Lumi runs. One can see this also from the time which a 8000 ev. run takes. The T1 accepts are suppressed relative to the T2 accepts.
This I don't understand. Do we have ~ 0.5/sec scraping Bhabhas and 2-Photon ee? As the run goes on,

21¹⁰ rate increases, now:
10.5 × 10.5 mA 5.6/sec, 2.7/sec
but T1/T2 ratio still the same



compare with page 139

28/7/82

0⁰⁰ Warming, Kobayashi
0⁰⁴ Run 12425 stopped by IBM error (IBM machine trouble).
We wated for a new filling in a few minutes.
5⁵⁵ Muon Crate Missing (Faulty Part 3) appears very frequently.
5⁵⁷ A part of the beam is lost. We ask for a new filling.
7¹¹ ID trip: Spark 23R1 + Anode current + HV output), reset OK Wg. Reason was partial beam loss.

8⁰⁰ Dittrich and Hellenbrand are on shift.

---

16 00 Finch and Minowa
1620 <Newfill, the beams are lost.
Before
Short Break
1805 Run down the MAGNETO to 3000 Amps.
1835 Injection starts. Run up the Magnet to 7500 Amps. — or rather we don't — neither computer or manual control. Note: Red 'Serv Limit LED on'. We call Kgroup. — they reset it
19.15 Break (Length * undefined) so magnet taken down again.

28.7.82

1906 – Break – again

19.25 Lose control of magnet. Injection starts
19.29 Ring Kgroup – no reply for 5 minutes – now they're coming
– After some time they tell us – Motor that runs up magnet is broken – overheating –. We set it to 7500 A – LEAVE AT THIS VALUE TILL FURTHER NOTICE – they should mend it tomorrow.
20.14 New filling ready
20.30 error 50 in 34611 (YPARA). – YPARA rebuilt, ~~OK~~.

22.00 No triggers – Level 5 (twice)
22.37 " " " "
23.05 – PLUTO High Volt go off – PETRA T.V. says turn on the High Volts! – Now we must switch on the magnets!
Now in a Luminosity Run N.B. – new PKR shift is having fun.
Could this be because our colour T.V. has –ve luminosity of –0.04?
23.17 I can't resist the temptation to ring PKR and ask them about T.V. – They say they can and change display back to 'Running with Separated Beam' until next injection.

24.00 Krahbühl und Takeshita on shift
29/7/82
2.20 5 Times IBM Transfer Error 54, Subcn 140000, Err Cnt 0. After 5th Trial: IBM LINKED Successfully
3.20 I.D HV goes down by Anode current over.
3:41 No Trigger — TRIGGER BOX Level 5 error
3:43 I.D HV down by Anode over current.
6.28 During Background Optim. Beam Lost, altogether in our Leadglass → Almost all Power Supplies tripped with "overcurrent." ⓐRHB is done.
A note to ID people: There is a noisy fan in a DL8 Power Pack.
(You hear it "behind racks". Maybe danger of sudden failure!)

8:00 Kobayashi & Warming on shift
for PLUTO low energy running at E_{cm} = 17.0 GeV
experiment # set to 21
LG thresholds need to be changed
Run 12446 with high thresholds (still the same thresholds as at 34 GeV)
fluctuating background

Run	Date	Start	Stop	at Run Start I_+	at Run Start I_-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	To rej. $\times 10^6$	T_1 Acc. Sum.	T_2 Acc Sum	T_1 Bit 2 $E_1 \geq 6$ GeV	T_2 Bit 17 $2T \cdot E_4 \cdot 2t_4$	ON/OFF N50	MIP	TOF	$\langle L \rangle$ $\times 10^{30}$	SLdt Run	SLdt Exp.	IBM TAPE	BP [V]	T_2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks
12437	28/7/82	16:00	16:14	6.47	6.61	12.2	835	1161	217	27	396	1767	122	347	ON	ON	ON	0.0	0.0	—	IBM		61	ø	ø	17.3	Beam lost
12438	"	20:24	20:31	11.16	11.26	15.6	363	863	95	15	200	1345 1310	63	454	"	"	"	0.0	0.0	—	IBM		64	ø	ø	17.7	Stopped to reload TDARA
12439	"	20:35	21:41	10,73	10.78	13.0	3932	8002	1023	133	1921	13400	630	3779	"	"	"	0.0	0.0	—	"	0.9	64	0	0	17.3	
12440	"	21:42	22:48	9.20	9.16	13.1	3959	8002	1030	1350	1967	13400	639	3884	"	"	"	0.0	0.0	—	"	0.8	63	ø	ø	17.3	
12441	"	22:49	0:00	8.19	8.11	10.3	4253	8002	1106	114	1934	13559	597	3662	"	"	"	0	0	—	"	0.7	62	ø	ø	"	
12442	29/7/82	0:00	0:34	7.32	7.21	7.4	2006	3531	521	49	939	5525	258	1524	"	"	"	0	0	—	"	0.63	62	0	0	"	
12443	"	7.14	2:08	10.99	10.86	14.9	3259	8002	848	126	1926	13765	609	4786	ON	ON	ON	0	0	—	"	1.0	64	0	0	17.300	
12444	"	2.09	3.46	9.22	9.12	12.0	4009	8002	1042	126	1843	13540	635	4032	"	"	"	0	0	—		0,84	63	0	0	"	
12445	"	3.17	4.34	8.00	7.91	11.7	3927	7152	1022	119	1759	11811	578	3263	"	"	"	0	0	—		0.70	62	0	0	"	ID HV down (twice)
~~12446~~	~~"~~	Exp 21																								
12446	29/7/82	9:21	10:05	2.47	1.98	7.2	2462	3597	640	46	1003	6813	263	307	ON	ON	ON	0.27	0.66	0.66	IBM	0.6	64	49	2	8.509	High thresholds New Energy
12447	"	10:11	10:22	2,32	1,36	10.7	550	1376	143	15	755	1653	224	386	"	"	"	0,26	0,14	0.80	"	0,3	65	8	3	8.508	Le threshold changing
12448	"	10:23	10:57	2,28	1,32	7.1	1506	~~3972~~ 2972	~~391~~ 391	27	1555	3587	525	1003	"	"	"	0,30	0,46	1.26	"	0.3	~~83~~	31	0	"	low threshold, ~~Beam was dumped~~ Beam was not dumped
12449	"	11:36	11:58	2.05	1.16	4.2	1326	1975	345	15	1206	1801	348	410	"	"	"	0.26	0.34	1.60	"	0.15	61	23	0	8.507	beams dumped finally
12450	"	12:42	12:49	3.02	3.22	10.7	69	256	18	2	102	220	24	106	"	"	"	0.41	0.03	1.63	"	0.5	45	2	0	8.510	beams lost
12451	"	15:25	16:38	2.70	2.86	6.1	4351	8002	1132	69.5	4577	8595	1496	2575	"	"	"	0.57	2.50	4.13	"	0.2	63	187	5	8.510	
12452	"	16:38	16:57	2.46	2.60	5.9	1074	1960	279	16.4	1133	2013	393	570	"	"	"	0.53	0.57	4.70	"	0.18	62	42	1	"	stopped to reset tagging threshold
12453	"	17:00	18:15	2.37	2.52	7.2	4466	8002	1162	83	4806	7868	260	2222	"	"	"	0.71	3.18	7.88	"	0.16	61	166	4	"	tagging thresholds lowered to cope with $E_\gamma = 8.5$ GeV
12454	"	18:17	19:33	2.14	2.28	5.4	4541	8002	1181	64	4708	7888	1646	2206	"	"	"	0.65	2.93	10.81	"	0.16	61	161	3	"	
12455	"	19.33	20:52	1.93	2.06	5.1	4724	8002	1229	63	4851	7460	1686	1979	"	"	"	0.55	2.59	13.40	"	0.14	60	133	6	"	
12456	"	20:52	22:14	1.74	1.86	4.8	4888	8002	1272	61	5054	7115	1873	1849	"	"	"	0.50	2.44	15.84	"	0.12	61	130	2	"	
12457	"	22.14	23.40	1.57	1.68	4.5	5096	8002	1325	60	5120	6788	1857	1727	"	"	"	0.46	2.32	18.16	"	0.11	60	124	4	"	
12458	"	23.41	0.42	1.41	1.50	4.2	3693	5674	960	40	3667	4782	1367	1183	"	"	"	0.42	1.54	19.70	"	>10	61	78	2	"	
12459	30.782	1.35	1.36	2.84	3.40	00	0	61	0	0	20							0	0								run screwed up
12460	"	4.59	5.09	~~2.71~~ 2.71	3.31	5.4	587	1023	153	145	569	1000	184	289	ON	ON	ON	wrong	wrong		IBM	0.2	59	25	1	8.514	run stopped because tagging HV was off MTR' = 63
12461	"	5.09	6.25	2.87	3.26	5.4	4525	8002	1176	63	4750	7767	1548	2278	"	"	"	0.68	3.07	22.77	"	0.2	60	166	8	"	
12462	"	6.25	7.44	2.58	2.95	5.1	4694	8002	1221	62	4855	7663	1677	2120	"	"	"	0.72	3.39	26.16	"	0.2	61	174	6	8.507	
12463	"	7.48	8.03	2.10	2.63	5.4	929	1691	242	13	1004	1628	376	432	"	"	"	0.63	0.58	26.74	"	—	61	36	0	8.507	
		EXPERIMENT 22																								
12464	"	11.14	12.00	11.46	11.29	20.3	2659	8002	693	140	2554	10859	953	3561	"	"	"	8.08	21.47	21.47	IBM	1.0	62	274	8	17.30	
12465	"	~~9.00~~	~~9.44~~	9.5	9.4	16.8	2620	8002	682	115	2479	11214	955	3455	"	"	"	7.31	19.16	40.63	"	1.0	63	221	7	"	
12466	"	1244	13.22	8.12	8.01	16.6	2228	6905	580	96	~~184~~ 1934	9448	721	2856	"	"	"	5.93	13.21	53.84	"	0.9	63	173	2	"	Beams lost
12467			no	events																no events						

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E1>6GeV	T2 Bit 17 2T·E4·2tr.	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	SLdt Run	SLdt Exp.	IBM TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

29/7/82

9^{30} Lumi-determination for run 12446 is probably wrong

10^{20} LG threshold changed (from Run 12448):

Old Setting (17.3 GeV)

Etot & Ebarrel		DVM
①	6 GeV	1500 mV
②	2.5	1250
③	2.0	2000
④	1.5	1500

EC 1&2

①	4.0	920
②	1.0	460
③	0.5	458
④	0,3	276

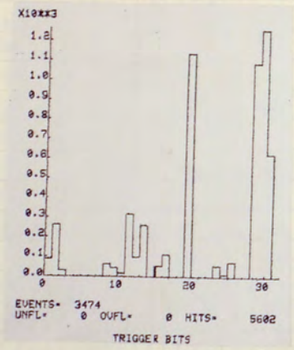
⇒

New Setting (8.5 GeV)

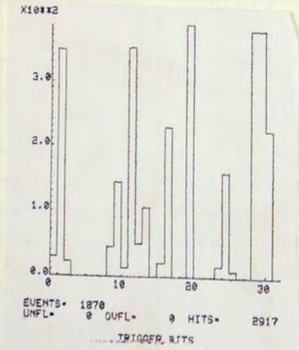
		DVM
①	3.2 GeV	800 mV
②	1.74	870
③	1.0	1000
④	0.75	750

①	2,0	460
②	0.5	230
③	0.3	275
④	0.22	200

Threshold for BG, EC, BS were not changed.
For the new threshold (at $I_+ \sim 2.3$ mA, $I_- \sim 1.3$ mA, BP ~ 0.3 V) event rate ~ 4 Hz, dead time ~ 1%.



old setting (Run 12446)



New setting (Run 12448)

10^{52} for 11^{35} Detector switched off for the machine test. Beams were not dumped.

13^{32} K-group people want to check/measure the transformer for ~ 30 min.

13^{32} New fill ready.

13^{42} K-group finished their measurements

Temperature going up quite fast (18.5° → 22° during the last ½ h.) ⇒ People are working on the cooling system

14^{00} Cooling system has started to work again.

14^{05} Called Mr. Pillat to work on Magnet again during the time to wait for cooling down.

15^{30} temperature is now 17.4°C. Mr Pillat finished his work. We now start data-taking.

Overcurrent in LG-HV-supply, HV-settings checked by program (LG2) RI-HB.

16^{00} Finch + Glendinning on shift

17^{00} Tagging thresholds lowered for pursuit low energy runs (after Run 12452)

17:02 Trigger hang at level 1 : NORD problem, paused & continued & it worked. I don't see any possible connection myself, but it happened almost exactly when I pushed the button in the H/W room to reset MH crate 13. It must be that gregarious Geordie gremlin you keep in your briefcase!

17.55 YSPY error Trigga 2 output missing 97 145

18.04 " " " 1 " "

18.14 12453 stopped 12454 started

12.23 YSPY error Trigga 2 output missing 137

18.32 " " " 153

19.52 " " " 185 presumably due to low rate.

57 "No trigger 6th - faulty part? flashes on Colour T.V.

30107182

0^{00} Schmuckloth & Cord

1 35 after several attempts of filling they loose the beam again.

2^{00} längere Unterbrechung - long break : several power supplies down due to pump failure
⇒ power magnet down to 2000 A

4^{50} finally new filling
problems, when switching on HV. Power Supply 18/19 had overload; switching it off and on helped
tagging HV (MFR=63) had to be switched on as well.

5^{09} everything seems to work now.

8.00 Hinowa, Meier
High energy filling starts
Next experiment number set to 22

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E₁≥6GeV	T2 Bit 17 2T·E₄·2tr.	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	SLdt Run	SLdt Exp.	IBM TAPE	BP [V]	T2 Reg. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

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For the high energy runs LG thresholds + Tagging thresholds are set back to the old values. See P. 160

12:50 BP-Meter stays almost constant at ~1V during the present filling → relatively high DT of ~15-20%. We informed PLR.

13.44 Temperature near DL8's is now above 20°C. We switched off branches 4 +5 (left side)

15.15 LG CAMAC-crates switched off as well since temperature stays constantly above 20°C.

≈16.48 T counting house < 19°C → switch crates on

15 ≈16.50 Timeout in branch 5, crate 5, red Lamp on one DL8 permanently on. Pull out DL8 and put back again helped. After that we discovered that crate 5 was completely missing in the wire map. Touching all units solved the problem.

16.00 Glendinning, Takashita

16.34 "2) HV WRONG" error on TAG — neglected

16.50 beam lost and ID overcurrent error, however we cannot reset. ~~it~~ ~~Hellenbrand came~~ (avoid overcurrent loop on)

17:40 TROUBLE AT (MACHINE) POWER SUPPLY, RESTART AT 19:00

19:16 ~~CAMAC crates~~ Time out in branch 4, crate 7, red lamp on one DL8 (Station K4.15) pull out DL8 and erase the connectors, then broke. RUN 12467 becomes a Junk RUN.

YPSY detected error many times (7) IET "DL8 giving no response 28" crate 11 chamber 525 224 — 232 ; 8 lack of data in wire map

20:10 Touching all connectors (in front of the DL8) (to clean up) solved the problem. (gently)

20:36 Trigger Box hang up level 6, reset as prescribed.

20:55 YSPY: DL8 :28 giving no response. Toggled wires and OK.

21:20 We find in Tst chamber-wire map a hole at DL8 →8 (the same Module as before), so we touched gently the connector. → O.K

21:40 beam lost — Run 12472 ended.

22:00 MAGNET FLUCTUATED UP TO 8200 manual controlled to 7500

0.0 Rowe & Clarke

1.35 Pluto are having big problems with their computer and would like us to take over as coordinator for the moment.

1.40 Level 5 trigger box hang up. RESET AS PRESCRIBED

We wanted a re-fill (at ~1.40) but PKR say they have trouble with synchrotron — so keep on going! ....

3.10 Still going ...

3.10 Timeout br 7 cr 5 : ID ring 3

7.10 Pluto phone. Suggest turning off HV ∴ Lumi is so low ($1\frac{1}{2} \cdot 10^{30}$). Linac 1 is down. We switch off. RESTART at 9.00 am however ------

7.15 VON TRAP strikes again.
Spend entertaining last ½ hr. DC gets stuck in toilet, has to be rescued via side emergency escape hatch, after unscrewing window. Toilet temporarily out of action - cannot open main door. Should recommend to DESY PRC that all new spaceships be equipped with speedier means of escape and more efficient emergency signalling equipment.

8.00 Hellenbrand & M'Cann on shift

8.12 20°C in hardware room, DL8 crates switched off as long as PETRA is not working

9.30 temperatur 19°C

10.50 temperatur 25°C

12:00 Glendinning takeover from M'Cann.

13:00 we run down the magnet at 77.00, doing it by computer was not possible this caused Magnet Read Error
so we run it down manually, but at 3900 it came not out of the 'servo limit'
we phoned K-group, but could not reach anybody till 73.00
then 4 people came and lowered the magnet to 7500 outside in the magnet hall

to raise the magnet, 4 people (3389) have to be called

13:20 temperatur in the hardware room 17.2°C

15:15 Run 12480 - Never tested for chamber status, not written.

16.00 Schiemann + Minowa

16.27 Computer control of the JADE MAGNET is now working. set to 7500 Amps.

16.45 Ri-HB done. to re-load HV for LG-counters.

17.25 Beams back. Background is too high ~1.3 D. wait for the optimization

17.45 start Run 12481
DL8 time out BR7 CR7, touch the cables and
then, " BR6 CR1. " "
" " BR4 CR7
now time out error is gone. But 1 DL8 missing in the wire map. wire 736-.
touching cables again helped.
(Run 12481 was not really started)

18.49 RUN 12482 terminated. for-s lost

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	T0 rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit2 E₁>6GeV	T2 Bit17 2T·E₄·2tr.	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	SLdt Run	SLdt Exp.	IBM/TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks
12468	30.7.82	16.01	16.51	9.33	7.91	10.5	2940	6655	766	80	2393	8911	800	2273	ON	ON	ON	6.12	18.00	71.84	IBM	0.75	61	202	8	17.300	beam lost.
12469	"	— JUNK —																			"	0.93					JUNK RUN
12470	"	19.18	20:03	10.19	9.59	14.7	2672	8002	695	102	2393	10302	914	2838	ON	ON	ON	6.98	18.64	90.48	IBM	0.90	58	231	9	17.300	
12471	"	20:04	20:50	8.44	8.32	17.8	2790	8002	725	128	2346	10759	879	2810	"	"	"	5.77	16.10	106.58	"	0.95	61	206	13	"	
12472	"	20:50	21:40	7.71	7.24	11.1	2947	6882	766	85	2273	9260	814	2094	"	"	"	5.48	16.14	122.72	"	0.77	61	202	6	"	
12473	"	22:56	23:45	11.03	10.71	13.4	2943	8002	766	102	2843	10365	1065	2860	"	"	"	8.21	24.16	146.88	"	0.77	61	317	7	"	
12474	31.7.82	23.46	0.37	9.10	8.85	12.4	3071	8002	798	99.1	2720	10798	1086	2737	"	"	"	7.07	21.70	168.58	"	0.82	62	264	9	"	
12475	"	0.38	1.38	7.68	7.48	10.3	3594	8002	935	96.4	2782	10651	1020	2330	"	"	"	6.08	21.86	190.44		0.75	61	247	4	"	
12476	"	1.40	2.52	6.4	6.23	9.5	4280	8002	1113	105	2834	10672	1044	2017	"	"	"	4.8	20.53	210.97	"	0.65	61	222	5	"	↓ Running continued (synchrotron problems made it not possible to refill).
12477	"	2.52	4.20	5.26	5.12	6.1	5281	8002	1374	84	3144	10194	1152	1562	"	"	"	3.45	18.13	229.10	"	0.45	59	262	9	"	
12478	"	4.21	6.05	4.14	4.12	5.1	6268	8002	1630	83	3238	10626	1162	1452	"	"	"	2.41	15.09	244.19	"	0.35	60	183	8	"	
12479	"	6.06	7.15	3.31	3.23	4.2	4123	4668	1072	45	1891	6037	642	669	"	"	"	1.69	6.96	251.15	"	0.30	59	89	3	"	↓ beams dumped
12480		test run																									
~~12481~~	"	no events		stopped	due to	DL8	time out	error														~~4.40~~				~~17.300~~	
12481	"	18:04	18:46	9.57	9.74	17.8	2475	8002	644	114.9	2321	11036	891	3342	ON	ON	ON	6.98	17.26	268.41	IBM	1.10	63	238	8	17.300	
12482	31.782	18:47	18:50	8.20	8.39	16.6	114	339	29.6	4.9	114	506	44	158	-"-	-"-	-"-	6.85	0.78	269.19	-"-	1.1.	60	10	0	17.30	Beams Lost
12483	-"-	21:18	21:30	10.67	10.60	22.7	701	1658	183	41	551	2224	197	643	"	"	"	7.32	5.13	274.32	"	0.8	62	76	2	17.30	
12484	"	21:31	22:26	10.18	10.11	16.4	~~3268~~ 854	8002	851	140	2790	10308	966	2623	"	"	"	7.57	24.74	299.06	"	0.75	60	303	13	"	Run also written to tape FM088
12485	-"-	22:29	23:18	8.52	8.50	17.0	2905	6277	755	128	2266	8052	840	1769	-"-	-"-	-"-	6.44	18.71	317.77	"	0.68	59	227	11	17.30	" FM107 ff.
12486	-"-	23:23	23:46	7.04	7.03	9.1	1397	2857	363	32.9	1032	3771	366	778	-"-	-"-	-"-	6.01	8.40	326.17	"	0.59	60	110	4	17.30	" " 125
12487	01.8.82	23:47	0.24	6.55	6.55	9.4	2816	5830	733	69.0	2034	7926	757	1699	"	"	"	5.19	14.61	340.78	"	0.55	61	176	2	"	Beam dumped
12488		no data																				1.05				"	
12489	01.8.82	7.34	7.50	10.51	10.97	41.7	705	1120	107	76.3	319	1190	143	339	"	"	"	5.42	3.82	344.60	"	0.85	38	35	0	"	
12490	"	7.56	9.16	9.67	10.12	7.7	4785	8002	1244	95	2995	10057	1360	2579	"	"	"	6.88	32.92	377.52	"	0.8	61	326	4	"	
12491	"	9.18	10.11	7.46	7.87	6.2	3750	5298	975	60	1980	6891	929	1464	"	"	"	5.34	20.03	397.05	"	0.6	60	215	1	"	Beam dumped
12492	"	11.11	11.15	10.8	10.38	12.50	260	725							"	"	"	8.38	2.18	399.23	"	0.8		25	0	"	Run stopped, beam Temperatur problem >260%
12493	"	12.58	14.01	7.37	7.08	9.2	3720	6614	967	80	2144	~~8813~~	1030	1773	"	"	"	5.56	20.66	419.89	"	0.7	60	252	2	"	Beams lost
12494	"	17:07	17:22	10.96	10.77	~~DL8~~	813	2053	211	26	619	2099	294	531	"	"	"	8.85	7.19	427.08	"	0.8	49	95	1	"	
12495	"	17:28	17:36	Vac!	9.90	9.2	474	1038	102	11	347	1139	151	281	"	"	"	8.73	4.14	431.22	"	0.8	55	52	0	"	beam lost
12496	"	18:35	18:50	11.08	10.75	13.1	716	1575	186	24	558	2211	253	597	"	"	"	9.20	6.58	437.80	"	—	62	64	1	"	lost.
12497	"					JUNK		ONLY		2	MINUTES																DL8 Temperatur problem
12498	"	20.50	21:13	10.94	10.61	10.8	1345	3111	350	38	1012	3858	444	1016	"	"	"	8.91	11.98	449.78	"	0.85	62	114	1	"	
12499	"	21.22	21:36	9.88	9.60	39.2	577	1252	150	59	369	1662	139	446	"	"	"	5.24	3.03	452.81	"	0.78	60	24	2	"	
12500	"	21:39	21:42	8.94	8.71	13.7	167	479							"	"	"	6.78	1.13	453.94	"			12	1	"	

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E1>6GeV	T2 Bit 17 2T·E4·2tr.	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	SLdt Run	SLdt Exp.	IBM/TAPE	BP [V]	T2 Rej. Ev. Fr.(%)	Bhabha	MH	Ebeam	Remarks

31/7/82

18:55 Error message on Printer: Input. fluctuations
19:14 SHORT BREAK
22 30 Ill. Monitor Call in 33547 (same system program)
JDAS still runs. Nord should be reloaded after beam dumps.
23.16 RUN 12485 STORED. NO TRIGGERS. Level 5

1.8.82
0 00 Hugh McCann Sachio Komamiya
0 40 Beam dumped
0 50 Nord is reloaded
2 30 New beams ready Background is high (B.P. = 1.3)
DL8 problems. Time out Branch 7 crate 5 and Branch 5 crate 5.
to LAM grader ? to DL8 changed
05 30 Power failure. Beams lost. ID trip.
06 45 restart NORD (Colour T.V. problem)
07 25 New Beams ready
07 30 start run. MP-16 strat pulse missing (JDAS error)
or T2 crate off line
Muon crate missing (5) reset O.K.
07 50 re-load NORD
08 00 Dietrich, Rowe on Shift
Get MP-16 error every so often (see alive).
9 18 MP-16 errors seem to have gone away with the starting of a new run.
9 45 Temperature in H/ware room is ≲ 20°C! If it goes up any more, may have to switch off.
9 50 Trigger 1 I/P & O/P missing again.
11 05 HV O/P trip of ID when they last dumped beams, because I couldn't run up
The ID voltage at beginning of this new fill. Reset OK.
Temperature has reached 20°C. Call ID expert for advice. Nozaki comes
We & switch off the DL8's.
12 55 Switch DL8's back on & start run.

13 23 No triggers etc etc. Level 5. Reset ok using Krehbiel's sequence.
13 33 IBM Link went down. Restarted successfully.
14 02 Beams lost. → Short break after lots of attempts at injection. The DL8's are at 20°C again. Switch off.

16.00 Nozaki & Glennning
Still short break.
Room temperature around DL8's 19°C. Still powering DL8's are off.
16.55 Temperature = 18°. Switch on DL8's.
17.00 New fill is ready.
17.07 Start run 12494. Holes at DL8 with wire # 1424 ~ 1432 was found.
Pull and push the signal connector and the DL8 works time to time.
17.26 Stop the run. start new run 12495.
17:56 Pluto Phone - their PDP is not working so they are going home (!) and asked us to coordinate temporarily.
18.33 Run 12496 started.
18.50 Time out Br 4 Cr 7. Temperature = 20° Switch off DL8's.
Temperature does not go down so fast.
20:50 Taking data again.
One of the lead glass power supply was found to be off.
Reset and switch on then OK.
21.28 Time out Br 4 Cr 7. 3 times. Temperature 18°C.

21:25 Level 5 trigger hangup. Reset OK.
21:40 ① Wire # 1318 ~ 1376 Missing ② Wire # 384 – 400 Missing.
① Power of the corresponding DL8's reset and switch on then OK
② Pull out and pushed in the DL8's wire 384–400. touch the cable.
During these procedure time out of Br 4 crate 1 (same crate as corresponding to wire 384-400)
23 48. After trying something with (Br 4 crate 4). time out error disappears.
But we got 3 holes in wire map. Two holes are caused by additional DL8's.
Let's wait Heuer.

I want to propose that in such a hot day as to day it is better
to switch off the whole detector during the day time.
Otherwise we obtain a lot of DL8 trouble's
although only a few luminocity is obtained. T. Nozaki.

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E1>6GeV	T2 Bit 17 2T·E4·2tr.	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	∫Ldt Run	∫Ldt Exp.	IBM/TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks
168																											169
12501	2.8.82	1:06	1:57	9.5	9.9	12.4	2902	7594	755	93.9	2520	9940	958	2548	ON	ON	ON	7.39	21.43	475.37	IBM	.85	60	272	12	17.300	beams lost
12502	"	2:37	3:23	11.2	11.0	15	2735	8002	711	107	~~2547~~	10454	976	3062	"	"	"	8.2	~~23.4~~	497.77	"	.95	62	273	7	"	
12503	"	3:24	4:20	9.1	9.0	11.2	3363	8002	875	97.8	2794	10657	1046	2580	ON	ON	ON	6.98	21.47	519.24	"	.8	61	277	15	17.700	
12504	"	4:21	4:33	7.5	7.4	9.7	727	1574	189	18.3	556	2105	210	431	ON	ON	ON	6.31	4.59	523.83	"	.6	60	54	5	4	
12505	"	5:12	5:58	10.8	10.5	16.0	2771	8002	710	115.5	2547	10923	975	2997	ON	ON	ON	8.02	22.22	546.05	"	.95	63	279	10	17.700	
12506	"	5.59	6.40	8.8	8.6	15	2781	5850	645	95	2084	7693	782	1770	"	"	"	7.09	17.58	563.63	"	.6	60	205	10	"	
12507	"	6.41	6.43																								small number of events
12508		6.48	7.07	7.4	7.2	10	1101	2258	286	28.5	785	2909	284	587	"	"	"	6.35	6.99	570.62	"		59	73	3	"	
12509 – 12514		ID – Puller – Rems on tape																									
12515	2.8.82	9:10	9:20	10,2	10.5	13.	600	1786	–	–	–	–	–	–	ON	ON	ON	8.66	5.26	575.88	"	.95	–	–	–	17.300	N50 not reconfigured! no Run Summary
12516	"	9:32	9:45	9.2	9.7	13.9	794	2278	207	28.7	757	2989	288	859	ON	ON	ON	8.14	6.46	582.34	"	.85	60	67	1	"	
12517	"	10:27	11:15	10.9	10.5	14.7	2797	8002	729	107	2571	10737	988	3041	ON	ON	ON	7.87	22.01	604.35	"	.95	61	289	8	"	
12518	"	11:15	11:37	8.9	8.6	11.7	1279	3200	334	39	1096	4209	423	1018	ON	ON	ON	7.12	9.11	618.46	"	.80	61	135	4	"	
12556	Calibration run to IBM (TPC)																										

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E1>6GeV	T2 Bit 17 2T·E4·2tr.	ON/OFF N50	MIP	TOF	<L> ×10³⁰	SLdt Run	SLdt Exp.	IBM/TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

2.8.82 Goddard (last shift for JADE) + Kleve

1⁰⁰ All DL8-problems solved (for the moment): 1 DL8 had to be exchanged, 1 to be rubbed, 1 fuse at the V04 was gone
temperature at the DL8's is just 20° (at 1⁰⁰ in the night!)

1⁴⁰ Std histograms ok
5⁵⁰ Trigger hang up level 6
6⁴⁰ Emilly 5 had to exchange a DL8 because of timeout (wires 1368 – 1375)
7⁰⁰ End of this running period / no!

8⁰⁰ A. Wagner
PKR informs us that the following machine shifts (to optimize and study the luminosity) will be made with normal fillings. We can continue to measure, however background conditions can occasionally be worse.
9⁰⁰ beam conditions are good, we start a new run
run 12515 without N50, due to wrong configuration inherited from preceding pulser runs.
9⁴⁵ new filling started
11³⁷ beams lost.
DL8 Rings 1/2: crate power off, crate controller off-line
14²³ beams back, but we are not running due to heat problems.
start run with F8, readout pattern 77764 B, μ-digit: Ø, default trigg s: no
trigg source 2400 B, trigger act override: Ø
ID not on, trigger rate ~ 1.3 Hz, dead time ~1.5%
dead time this morning ~ 13%.
we inform PKR about this (Wrulich).

→ Problems with Beampipe power supply → HV-control of it disabled, H. Krhabek informed
15.51 Beams again
beam pipe seems ok again, was it a "wackel Kontakt"?

2.8.82
16⁰⁰ R. Felst on shift
18⁰⁰ P. Warming takes over for 3 hours
18⁴⁰ new fill ready → luminosity measurement only, data are not written anywhere
beams lost
19²⁶ new fill ready → again luminosity measurement only
19³⁵ 5 times timeout error in LG-ADC's branch 2 crate 5
23²⁰ Kawamiya takes over shift from Felst

3.8.82
0⁰⁰ Kobayashi & Takeshita.
0⁴⁰ ID has been ON. But since most of the DL-8 crates are OFF and ID is not necessary for the luminosity measurements, we switched off ID. Then trigger rate: 6 → 1.5 Hz, deadtime 7 → 1.5%.

3.8.82
04.00 Clarke.
4.30 Beams dumped.
4.53 New fill ready - luminosity measurement only.
5.49 Beams dumped.
6.15 New fill ready
7.00 Beams dumped
The End.

* Our magnet is still ON – PKR requested this, someone should discuss further with them.

9⁰⁰ After discussion with Hr. Krhampt (PKR), run Magnet down, Injektor off!
R. Felst

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E₁>6 GeV	T2 Bit 17 2T·E₄·2tr.	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	SLdt Run	SLdt Exp.	IBM TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

NEW RUNNING PERIOD

25-10-82

8[55] HELLSEN, EGSEN ON SHIFT

PETRA has several problems (Wiederbeginn 13[25] ???). Since Heuer is in the rucksack, we are not ready either. I left the rucksack, but we are still not ready!

13[25] "Wiedes"beginn scheduled for 14[00] now

15[45] " " " 17[00] now

So my last shift ends without beam!

26-10-82 8[00] Takeda Magnet problem. PKR doesn't know when it will be ready. They say I don't have to be here for the time being.

19[00] ID-Pulser Runs 12550 — 12555

27.10.82 8[00] Befohle on Magnet-shift

-15[00] leakage in cooling water of magnet. No magnet-shift until tomorrow (Magnet switched off)

28.10.82 8h Hmdt

no lumi-run today

19.30 All High Voltages for BP, TOF, TAG, FWHU set and checked. Fan in BP crate exchanged (Hippes crate).

30.10.82 11[00] Project playback. It didn't work, the terminal got stuck — restart the Nord ROM

15[15] Power supply of a tagging VIM-Crate broken. Since there was no spare available I exchanged the complete crate R. Heuer

20 - 22[9] K. Meier tries to measure the luminosity. The PKR wants to have the luminosity rate for adjustement of PETRA. There is a reasonable filling in the machine! No signal arrives at the PKR. We are not able to start a run, since there are no triggers. Experts H. Krehbiel and D. Cords cannot be reached. W. Bartel proposes to give up for the night. He will try tomorrow morning. I inform PKR that we are not there. Tasso and Mark J are measuring the luminosity Rdy

2258 $I^+ = 7.5\,mA$, $I^- = 0.3\,mA$ at 18.504 GeV

Note: Beam pipe temperature. Essential probes #17 - #22 give 0°C

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E₁>6 GeV	T2 Bit 17 2T·E₄·2tr.	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	SLdt Run	SLdt Exp.	IBM/TAPE	BP [V]	T2 Rej. Ev. Fr.(%)	Bhabha MH	Ebeam	Remarks

23.05 Background BP-rate 4.5–5 V
at $I^+ = 4.64$, $I^- = 0.28$ *), $E_{beam} = 18.494$ GeV

*) Probably wrong. I saw at the TV in building 1 that there were two magnet beams in PETRA R

31.10.82 8⁰⁰ Nozaki on shift
8²⁰ PKR asked to switch on our magnet. But I did not.
Do we still have water cooling troubles? No!
10⁰⁵ Run up the magnet.

Petra-programm: 1) Optimization of the machine setting with all magnets on. That are optical fiddles with Petra without lumi.

2) Optimization of lumi

12⁰⁰ Magnet trip current 7500 A → 0 A
called K people
12⁰⁰ MATSUMURA
12³⁰ K Group repaired Magnet 0A → 5000 A
12⁴⁵ 5000 A → 7500 A
16⁰⁰ U. Barkel on shift
16¹⁵ Superkothar problems run down magnet to 3500 A
20³⁰ Magnet to 7500 A
Magnet hang up at 5000 A not possible to change magnet current by computer.
Magnet Status error. Power switch off on solenoid –
Call K
Magnet ok again

1/11/82

24⁰⁰ G. Dahrid on shift
04⁰⁰ FINCH on shift
06.40 – PKR ring & request magnet switched off – I take it down to 0A using JDAS. (actually .0010 A)
6.46 – MAGNET-CONTROL PROBLEM – Computer disable for magnet.
Press 'computer off' – take magnet to 0A manually – it put back to 'ON' – goes up to 10 again.

What happened to the list of useful phon Nos? – previously selotaped to desk. For retyping to Mr. Platz

1/11/82

8⁰⁰ 1/11 Takeda a Komamiya on shift
10³⁰ Test run for muon chambers. (J. Baines)
12⁰⁰ It is found that T.V. signal does not come from PKR. – from the konsultäten perhaps!
16⁰⁰ McCann & Cords on shift
problem with LUMI counts for PKR: power supply of one of the MM crates is broken
23.30 MM-Crate (Tagging) exchanged
23.50 MAGNET ON: 7,500 Amps – at request of PKR. Leave it at that Current until they say otherwise.
Magnet ~~trip~~ control programme is not working, so must use manual 'RAISE' button – BE CAREFUL, the current overshoots by several hundred amps after you release the button (if you have held it down for a long time).

2.11.1982 Nozaki (HOU) Pearce on shift
00.00 Nozaki on shift? TV screen is still down. 7 GeV/c e⁻ beam
03.30 PETRA 7 GeV beam.
04.00 G. Pearce continues shift
6.30 Turn magnet down.

8⁰⁰ Ball, Fight
9³⁰ magnet to 7500 A (manual) — noticed strong vibrations from the cooling-Kompressor, phoned K-people, they fixed some pressure pipes and put them onto some rubber sheets. Hereafter vibrations seem to have gone.
10⁰⁰ TV-display still down
14⁰⁰ TV-working
15⁰⁰ e⁻ current on color-TV different from PETRA-TV
16⁰⁰ Olsson
11⁸⁰ load new ~~pe~~ JETC-Pedestals in Mipsroc-16
17¹⁷ Our magnet hangs at 1100 A, don't go down further. Also manually not possible. K-group is presently working at DORIS. PKR will tell them. Dorg is below "Stanklast Limit" so it doesn't matter too much for the moment.
18⁸⁰ K-Group was here, have somehow managed to get the control back, without knowing the reason. A transformer is still suspect.
2000 M. Minowa
2125 PKR request to run our MAGNET UP to 7,500 A:
2135 JADE MAGNET has now 7,500A.

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E₁>6 GeV	T2 Bit 17 2T·E₄·2tr.

2/11/1982

2222 Beams lost during the accerlation at 17.9 GeV.

2333 17.995 GeV $E_+ = 8.25$ $E_- = 8.39$ „Background optimisation"
2335 Beams lost

3/11/1982

0:00 Takeshita on shift
1:56 Magnet go to 100 A ← "PKR said there will be no beam for two hours"
4:00 Hellenbrand on shift
4:05 magnet to 7500 A on request of PKR
6:00 beams accelerated to 18.0 GeV (6×6 mA)
LUMINOSITY RUN, good background conditions, beam pipe current ≤ 0,7 V
but no triggers, prepulse was there, but no bunch pickup signal
7:00 Energy-Saving-Time, magnet to 2000 A

3/11/1982

8.00 Warming & McCann on shift
8:40 B. Narosha mount and ticket new TDC's, Calibration run 12556
9:00 magnet current raised to 7500 A.
PETRA: machine studies & preparations for luminosity runs, fine adjustments and control measurements
12.00 Exchanged double discriminator for t_0. Fine adjustment will be done by Krehbiel on afternoon shift, and. will a stable e^+-beam.

16¹⁵ Rowe PETRA ask for magnet current → 0
Krehbiel kindly offers to stay — jolly decent fellow! Have work to do here!
19.10 Message from PETRA: Einkoppelfenster (probably HF Power Feed-in Window) broken
No beams till to-morrow 8 h.
~~Whoever comes to a shift~~ Decision (v. Ruld & Felst) to cancel shifts. Whoever shows up can go home and sleep. Unable to reach Baines. Magnet will be run down by K
23.49 – OK. Austin I'll get a phone!!

ON/OFF N50	MIP	TOF	<L> ×10³⁰	SLott Run	SLott Exp.	IBM TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

4.11.82

0800 Ball
Wulf Bartel informs me that, due to the broken cavity window, which will be replaced this morning, PETRA restart is unlikely before this afternoon.

g^{15} Magnet on and current to 7500 A for ID-check
g^{30} Magnet failure, Mr. Pillat checks
g^{40} Magnet on again. 950 – 10^{15} ID-test → no?
There is a "vacuum spike" (Drudsberg) in our region, may be a leak. Vacuum people are investigating PBy

On TV: RESTART 5.11.82 (tomorrow), ca. 9 Uhr.

14^{50} Waterleak in the inner collimator? yes

5.11. Baines & Warming on shift
16^{00} Vacuum leak fixed hopefully until x-mas
The magnet is operative. It can be controlled by the computer.
to Bartel

16.22 NORD hung on level 3 – during ~~M~~ Mountain run, NORD restarted.

Important:

The water cooling system for the beam pipe has been damaged. The – 2 synchrotron radiation absorber inside the beam pipe is without cooling now. Thus we have to watch the beam pipe temperatur. Please fill in the table in the beam pipe log book.
If the temperature on any of the measuring points 19, 20, 22 exceeds 35° C you have to dump the Petra beams

6/11/82 00:00 Ball, Petersen
00:30 Signs of beam → machine studies
02:00 Vacuum heating with beam – monitor B.P. temp closely.
03:00 After 1½ hour of vacuum heating, temp at probe #19 has increased by 1 degree. Otherwise all stable.

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To ref. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E₁>6 GeV	T2 Bit 17 2T·E₄·2tr.	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	SLdt Run	SLdt Exp.	IBM TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

6-11-82

8.00 Hellenbrand, Meier

9.00 Message on lineprinter: 'no Q-response from pressure reading', the message was produced by YMAGNT. ~~The magnet~~ According to the JOAS manual this means, that the ID pressure is not read. We checked the pressure in the rucksack. It's still there! After restarting N10 and reloading ZOAS we got the message: 'INIT ERROR IN SERIAL BRANCH TO RUCKSACK' We checked the CC10-Crate and all the cables leading to it. Nothing was found. Then we started a test run to check wether the CAMAC readout of the CC10-crate works at all. We got all kind of error messages like YVOLTS....., e.t.c.

10:50 FDADC 2011-Unit in Rucksack Camac-Crate made powerfail. Take unit out (is used for ID-Pulser only) RAE

11:30

if you want to switch on Magnet after a longer break
First call K-group (3389) for 'Freigabe'

12:40 RT-Programs YEDISP, YECOPY and YHDISP, YHCOPY rebuilt because ring violation (RT descriptor = 34525) occurred during testrun

13:15 magnet down to 700 A
14:00-45 System reloaded, Conds

16:00 M. Nozaki & A. Wagner

Vacuum heating with beam still in progress. PKR tells us, that also during next shift Luminosity is very unlikely.

20:15 PKR informes that they want to collide beam for a while, so we can measure the luminosity.
20:20 I told PKR that our magnet was turned down. They ~~want~~ do not want to turn it up.
Beams are colliding. Beam pipe current ~ 5.5 volts!
$E_b = 16.996$, $I_+ = 1.62$ mA, $I_- = 3.36$ mA
20:30 Beams lost. No luminosity measurement.

7.11.82

0:00 T. KAWAMOTO
vacuum heating with beam is in progress
0h00 Q F. Pearce takes over the nights' vigil.
8:00 Nanoska & Takashita
PKR still don't know their plans, they are waiting for better vacuum.
13.30 Now "Machine Studies" on TV.
Timing of Prepulse was shifted by Krcheviel close to the position it had before the shut down.
G. Hughes and K.H. Meier working on Lumi electronics.

Magnet is ready to be run up, if PKR requests.

16:00 Komamiya + Darvill
Machine studies
19:00 G. Weber reported us that the vacuum was improved by an order of magnitude $10^{-6} \Rightarrow 10^{-7}$

8.11.82 Rowe, Heinzelman

Not a lot happening!

v 5:00 Petra reached during machine studies ~28.5 GeV with ~4 mA each beam.

8.11.82
08.00 T. Nozaki on shift
Message on TV screen "Vacuum verbessern mit strahl"
10.45 PETRA "short break" message on TV screen. It takes 5 hours.
12:00 Glendinning taking over shift.
14:50 Phone up PKR – they say the break will last 'till at least 7pm.

16:00 Pearce on shift.
20:00 Weber on shift
21:00 PKR asks to turn on magnet. Magnet set to 7000 A
22:00 Get error message: YMAGNT: NO Q-RESPONSE FROM PREASSURE READING. Call Nozaki, Eichler, Ehrenberg. Same Message came 2 days ago. Nozaki arrives, ~~signs~~ Ehrenberg is commuting

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 Bit 2 E₁>6 GeV	T2 Bit 17 2T·E₄·2tr.	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	SLdt Run	SLdt Exp.	IBM TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

8.11.82 (cont.)

22.30 PKR hopes to get beams run to 18 GeV. So far still trying to inject positrons, while there are about 3 mA of electrons. They apparently have trouble with the controll by NORD computer of one cavity. Expert just arrived to change modules. Still hopeful accelerate tonight.

23.00 Problems with serial CAMAC crate #1: *) "No Q-Response from Pressure Reading". All voltages of crate are off. After switching the error stays: Each read command gives "Error" on the serial Crate Controller. Plugging out of units does not clear the error. I phone D. Cords. For this night we switch off the Detector Checking Routine T2-Trigger + Tank Pressure Req.

*) see also page 178 at 6.11.82 10.50

0.00 Tuesday 9/11/82 Fred Loebinger

Ralph Eichler & Dieter Cords appear:

Error "No Q-response from pressure reading" caused by: i) Camac unit in wrong slot (19 instead of 3)
ii) occasionally power fail in crate

We take out all module not currently needed. It stays in only unit to write T2-trigger and to read the pressure. Crate still has power fail — Change power supply in this crate. All non-vital units still left unplugged.

On colour T.V. electron beam current is only updated at run start. Correct value is however getting through with the data — i.e. only the screen is wrong.

4.00 R. Feist on shift PKR got at injection energy 10 mA/beam accumulated!

4.50 2 × 8 mA at 17 GeV

5.00 e^- 7.0 mA e^+ 7.6 mA at 18 GeV Beam pipe current 1 V

5.10 start run without inner detector: error messages 1/ storm ref trance 3 crate 1 : T2/3 trigger
2/ 47 MP16 start pulse missing or T2 crate off time
magnet to 7500 (ist on time)

5.15 go to get Fred back

In addition to error messages on terminal, also get many YVOLTS error messages on printer: ERROR IN HV-SYSTEM, SUPPLY/MAINFRAME = 1, LG/BP SYSTEM H.V. CONTR. NO RESPONSE

Manage to clear all terminal error messages by plugging all but one of the "non-vital" units back into KAKSTACK crate (KACK S, crate 2). Last unit always causes crate overload, so left out.
By-passed all printer messages by disabling H.V. checking programs (on assumption that H.V.'s actually O.K. & fault is due to checking prog / CAMAC).

Now manage to get through "pedestal events" at run start, but then stopped by NO TRIGGERS. — Krehbiel's diagnosis (both on instruction sheet & via phone) is that it is a NORD problem.
However, PETRA energy is to be increased, so we switch off.

5.30 switched on ID beam pipe current 0.8 m A, background state, no TASSO phoned to say that they are swamped by background

06.35 Run magnet down to 1000 A
Energy Saving.

08:00 Ball, Becker, Hightlett
09:20 'Shore break'. , 1 cavity window got hot again, they are going to exchange it.
10:00 Magnet current → 50 A, didn't react to command terminal. Run down by hand → 11 A.
10:10 'Restart 9 PM'.
16:00 Takashita & Rowe
16:20 Magnet off, isolator off.
21:00 PETRA NOW INJECTION
21:05 MAGNETON — BUF FAILED "magnet status error Computer disabled for magnet."
30 min. later it worked manually. (NOT by computer) Computer control doesn't work.

10/11/82 0.00 Olsson Still Injection, no beam. TASSO Down!
1.00 TASSO on. Petra now accelerate 8,7 × 8.5 mA! 1.12 10 GeV! 1.00 13,2 GeV
1.30 16 GeV 1.49 17.995 and out. Lost!

3.30 Riesberg on shift.
4.40 Two beams of 8.3 mA each are accelerated and lost at 11 GeV
5.10 $I^+ = 7.7$, $I^- = 6.4$ lost slowly within 10 min. at injection energy
5.20 - 6.40 Different fiddles with Beam: According to TV: P_3 bunch can be easily filled but lifetime < 0.5 h!
P_1 bunch is difficult to fill.
Other injection Energy 7.002 GeV → same problems.

6.45 Magnet down to 500 A

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To ref. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 Bit2 E1>6GeV	T2 Bit17 2T·E4·2tr.	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	SLdt Run	SLdt Exp.	IBM TAPE	BP [V]	T2 Rej. Ev. Fr.(%)	Bhabha	MH	Ebeam	Remarks

182 10.11.82

7.00 My conclusion from this half shift: PETRA still seriously ill. - We are waiting since 16 days for luminosity -. It is not true that the problem is at ramping. The main problem is at injection and specially the short lifetime of the beams (optics?). Do they really need our magnet for these lousy fiddles? 2500 DM for a nonsense night. PKR comment: Wir kriegen's in griff!

7.50 Magnet current came up to 1140 A by itself

8.00 Warming
~~Bartel~~ + Komamiya
9.30 Masbender fixed the Gould plotter (one of the cables in the rear connector of the tektronix terminal was disconnected before)
10.30 PKR asks to run up the magnet → 7500 A
started procedure manually 1140 → 3000 A, then under computer control 3000 → 7500 A worked ok.

10.40 one of the DL8 crates is permanently blowing overcurrent
we take out all units, replace the fan-unit and replace the power pad, ⇒ it still blowing

11.30 start injection → beams lost
14.25 playing sort of combinatorical game * left us in the end with 2 working sets and 1 defect power pack
↳ * = having 2 crates, 3 power pads and 2 fan-units
14.45 Felst in PKR: they try hard to get luminosity, but when they reach high energies (~ 18 GeV) the vakuum in the cavities gets bad and they loose the beam

15.10 'Luminosity run' $E_b = 17.995$ $I^- = 5.42$ $I^+ = 5.42$
background is very high phone to PKR.

15.35 First Measurement of Luminosity:
Beam Energy is 18 GeV
Background on BP-meter ~ 4 V

$L = 2.13 \cdot 10^{30}$

15.40 BP-meter voltage was reduced significantly by removing counter 21
(Background now ~ 1V)
15.41 Test-Run stopped because of 'Readout Error 51 - False DL8 int. br. 7 cr. 2'
faulty DL8 found, Matsumura works on it.

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16.00 Wednesday 10/11/82. Uwe Schneekloth & Fred Loebinger & ½ of JADE.

16.20 1st data set to IBM for several months!
16.45 Petra reached 19 GeV (still ~ 4 mA) just before energy saving.
Magnet → 500 A.
17.00 PETRA-Bunchmarker System is defective. Throwing the 20 nsec-Switch at the PETRA-NW-Halle card changed the position ca 400 nsec. Pätzold from PETRA acknowledges this statement. We left the old position and added 4 m of cable to the input signal Run of the Bunch Marker Decoder. Tomorrow Pätzold will look after this fault.

23.00 18.000 GeV $I^+ = 8.36$ mA, $I^- = 8.57$ mA.
Beampipe 2.1 V.
23.50 switch on ID. Debug TOF, Much, TETC etc

24.00 Nozaki, Eichler on shift
Non increasing wire number. DL181 no response. Hit on DL8
00:21 LG timings are checked OK (M. Minowa)
00:25 start data taking
00:50 Riesberg changed DL8
1:03 Beams lost
Standard Histograms show empty histograms for tagging energy lumi-2 (all overflow)
2:29 start new run.
Deadtime as high as 25%. Stop run and start new one with pattern recognition programm off in N50. No improvement (still ~25% deadtime)
5:06 Beams dumped
6:24 New filling ready. start new run
6:35 ID-trip
6:45 beam lost, ID-trip. Run down magnet

To be fixed by the day shift:
1) tagging energy lumi-2 (Histogram has only overflows)
2) Trigger T3 I/P many missing sheets detected by YSP4
3) Order new log book

To be fixed by H. Hills on Friday
1) Online rejection fraction is different on TV and RUNSUMMARY
2) E^+/E^- currents on run summary sheet are only for end of run correct. The numbers for begin run are wrong. The currents written into the event header are correct.
3) NEW-MAGNET-AMPS:
a) read the present current for "current magnet setting"
b) give as a comment the nominal value, where to go to. (1500 and 7500 A only if 100 is not possible) In principle it is

Run	Date	Start	Stop	at Run Start I_+	at Run Start I_-	D.T. (%)	Time (sec)	Records out	All $\times 10^6$	To rej. $\times 10^6$	T_1 Acc. Sum.	T_2 Acc Sum	T_1 Bit 2 $E_1 > 6$ GeV	T_2 Bit 17 $2T \cdot E_4 \cdot 2tr.$	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	$\langle L \rangle$ $\times 10^{30}$	$\int Ldt$ Run	$\int Ldt$ Exp.	IBM/TAPE	BP [V]	T_2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks
184	EXP. 23																									185
12557	10.11.82	16:27	16:31	4.52	4.47	8.7	226	347	58.9	5.1	100	547	31	~~600~~ 179	ON	ON	ON	1.22	0.28	0.28	IBM	4.0	59	2	0	17.885	
12558	11.11.82	0:26	0:44	5.78	5.86	16.0	1072	2632	278.8	44.6	564	4130	217	~~497~~ 1390	"	"	"	1.99	2.13	2.41	"	2.5	52	28	1	18.000	
12559	"	0:50	0:53	5.61	5.67	18.6	192	407	49.9	9.3	109	639	40	234	"	"	"	1.80	0.35	2.76	"	"	58	2	0	18.000	beams lost
12560	11.11.82	2:29	2:51	5.98	6.93	26.2%	1266	3541	329	86.3	680	6175	241	~~2998~~ 738	"	"	"	2.66	3.37	6.13	"	1.5	59	27	0	17.995	
12561	"	2:51	3:57	4.32	5.02	12.8	3861	8002	1003	126	2080	13373	724	5667	"	"	"	2.35	9.08	15.21	"	2.0	59	93	1	"	no patrec in N50
12562	"	3:57	5:05	3.43	3.78	4.9	4040	4842	1050	51	1748	6403	617	1567	"	"	"	1.32	5.32	20.53	"	1.5	54	52	4	"	beams dumped
12563	"	6:27	6:41	4.89	6.43	14.6	1052	2136	273	31.7	524	3357	178	1292	"	"	"	1.55	1.63	22.16	"	2.5	57	20	1	17.995	
12564	11/11/82	10:03	10:20	6.65	7.01	11.2	1769	2458	304	34.7	597	4079	207	1357	ON	ON	ON	2.02	2.36	24.52	IBM	2.85	56	25	0	17.995	wires 384-448 missing
12565	"	10:24	11.24	6.23	6.66	14.9	3560	8002	927	137	1869	13405	661	4524	"	"	"	1.94	6.90	31.42	IBM	0.85	56	74	2	17.995	
12566	11/11/82	11.34	12.46	5.10	5.38	10.0	4323	8002	1125	112.5	2137	12679	805	3860	"	"	"	1.30	5.61	37.03	"	0.65	56	78	4	"	
12567	"	12:50	13.53	4.22	4.39	7.1	3804	8487	990	70	1749	8091	621	8580	"	"	"	1.25	4.75	41.78	"	0.60	55	56	1	17.995	
12568	"	14.01	14.20	3.56	3.67	5.0	1340	1667	348	17.5	507	2312	165	487	"	"	"	1.03	1.39	43.17	IBM		53	12	0	17.995	Same fill afterall
12569	11/11/82	15.39	16.32	7.33	7.75	16.9	3175	8002	826	140	~~1843~~	12987	721	4671	ON	ON	ON	3.22	10,23	53.40	IBM	1.4	56	105	4	17.995	
12570	11/11/82	16:33	16:38	5.47	5.83	15,9	285	693	74	11.8	167	1046	64	337	ON	ON	ON	2,81	0,80	54,20	IBM		55	19	~~0~~	17,995	
12571	11/11/82	16:45	16:52	5.52	5.19	11,3	425	890	118	12.5	207	1354	85	402	ON	ON	ON	2,19	0,93	0,93	IBM	0,9	56	8	~~0~~	18.495	!! Beams lost. Energy saving
12573	11.11.82	21:49	22:02	~6.8	~6.8	26,3	310	810	81	21,2	176	1241	57	561	ON	ON	ON	2.50	0.77	54.97	IBM	~1.6	57	5	1	17.995	
12574	11.11.82	22:02	22:36	6.16	6.44	17.7	2023	5085	527	93	1101	8227	402	3476	"	"	"	2.31	4.68	59.65	"	1.2	56	45	2	"	
12575	11/11/82	22.50	00.33	5.29	5.49	5.5	6031	7745	1569	86	2847	10021	1034	1941	"	"	"	2.19	13.21	72.86	IBM	0.8	55	134	6	18.295	
12576	12/11/82	00.39	00.44	~~0.81~~	~~5.87~~	4.1	287	340	75	3	114	374	35	69	"	"	"	0.5	0.15	73.01	"	0.8	47	2	0	19.000	
12577	12.11.82	03:08	04.14	4.14	3.99	4.3	3546	3348	922	40	1060	4681	297	3570	ON	ON	ON	0.06	0,2	73,21	IBM	1.0	55	1	0	19.012	
12578	12.11.82	05.08	06.28	8.1	7.28	11.4	4523	9263	1177	134	2519	13042	973	3923	ON	ON	ON	3.21	14.53	87.74	IBM	1.5	55	165	8	18.700	
12579	12.11.82	06.30	06:39	5.91	5.07	7.4	457	785	119	8.8	251	964	92	249	ON	ON	ON	2.65	1.12	88.86	IBM	1.0	51	12	0	18.700	Beams Lost
12580	12.11.82	15.03	15.50	4.17	4.29	6.9	2808	3839	731	50	1233	5290	412	1051	ON	ON	ON	1.26	3.54	92.40	IBM	1.4	55	87	3	18.495	
12581	"	15.52	16.38	3.34	3.66	4.8%	2736	3067	712	34	1071	4168	359	682	"	"	"	0.71	1.94	94.74	"	0.7	56	41	1	"	energy ramped up at end of run
12582	"	20:51	21:55	5.51	6.88	21.5 Trans	3849	8002	1001	214	2126	12534	610	4761	ON	ON	ON	1.62	6.26	100.60	"	1.0	57	58	0	"	
12583	"	21:56	22:28	4.55	5.61	7.0	1923	2861	500	35	964	4088	295	1290	"	"	"	1.18	2.28	102.88	"	~1	57	23	0		beams lost
12584	13.11.82	02.32	03.32	6.29	6.50	22%	3029	8002	788	173	2115	12322	543	5284	"	"	"	2.28	6.92	109.80	"	1.5-1.0	58	60	3	"	
12585	"	03:32	05:05	5.13	6.27	6.1%	5549	8002	1444	88.8	3036	10196	928	2174	"	"	"	~~2.28~~	~~12.60~~	~~116.10~~	"	1.0→	57	129	4	"	
12586	"	05:06	05:11	3.96	4.00	5.1	236	383	61	3.1	147	385	40	352	"	"	"	1.54	~~6.50~~ 0.36	~~122.40~~	"		47	4	0	"	beams lost.
12587	14.11.82	6.38	7.56	6.5	6.6	7.6	4617	8002	1202	91.9	2841	10286	898	2302	ON	ON	ON	3,34	1544	138,20	"	1.1	56	143	4	18.495	
12588	"	7.57	9.11	~~8.05~~	5.05	6,7	4428	6890	1152	77,1	2451	8979	792	1776	"	"	"	1,88	8,30	146,50	"	0,65	56	118	1	"	
19589	"	9.18	10.02	~~3.18~~	~~3.77~~	0.9	2350	4622	610	60	1682	6022	442	2107	"	"	"	0.86	2	148,50	"	1,1	58	28	0	18,685	Beams dumped
12590	"	12.41	13.35	7.96	8.16	18.5	3055	8002	794	147	2357	11467	706	4344	"	"	"	4.06	12.42	150,92	"	1,5	64	148	4	18,685	
12591	"	13.35	13.36					97							"	"	"	1.0	0.04	150,96	"	1,5		3	0		
12592	"	14.17	14.27	5.55	5.63	4.2	487	546	126	5	211	624	55	143	"	"	"	0.04	0.02	150,98	"	0.7	54	0	0	"	Trigger 13 / out until further

10 FWD µ Trigger

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 Bit 2 E₁>6GeV	T2 Bit 17 2T·E₄·2tr.	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	SLdt Run	SLdt Exp.	IBM TAPE	BP [V]	T2 Rej. Ev. Fr.(%)	Bhabha	MH	Ebeam	Remarks

11/11/82

8:00 Pearce and Hellenbrand on shift

9:10 magnet to 7500 A

10:00 start RUN 12564
removing cable #9. reduces beam pipe current from 4 to 1

10:12 wires 384 - 448 missing, broken power pack

10:24 after repair RUN 12564 stopped and RUN 12565 started
since 9:30 Meier is working at the tagging system

11.30 B. Naroska adjusts TOF ADC anode-gate timing in middle of run 12566.

13:00 T3 trigger : reversed cables between T3 crate 4 + ch stage 3 card.
" " " " " 6 " 3 "

leading to gaps in T3 i/p + o/p histograms in groups 4,5, 24,25,26,27, 33,34,35,36.
group 15:1 frequently missing due to dead layer 1 chambers (resistor failure). This group signal is now permanently enabled.

Permanently enabled groups are now: 6·1, 6·3, 7·3, 8·3, 9·3, 16·1, + all group 1 signals in streets 21→36 (endwalls)
(6·1, 16·1: no layer 1; 6·3, 7·3, 8·3, 9·3: jammed roof layer; endwalls: no layer 1 installed)

As a result of the above faults, no forward muon trigger data before run 12567. AB.

There will be a new fill at 13^45 @ 18 GeV. PKR will attempt to increase the energy to 17GeV during this fill provided conditions are right.

13^55 PKR say they have a water problem with the synchrotron & could therefore not inject. Since the last fill was fortunately not dumped we will continue to run with these electrons @ 18GeV.

Colour TV program has a run time error.

14^20 Beams dumped. Run 12568 ended.
D Cords arrives and solves the colour TV program problem.

15^30 New fill ready @ 17.995 GeV. Start run 12569

16:00 T. Kawamoto and H. Riesberg on shift.

16:38 PETRA try to increase energy after RUN 12570 stopped.

16:49. E_b = 18,495, I_+ = 5.54, I_- = 5,21 BP rate 1,3V → 0,9V, chamber current low.

16.52 After 7 min run at 18.5 GeV beams lost. Energy saving time. (No Multihadron) Magnet down to 1200 A

17.25 Overflow in -2 Tagging Energy histograms was caused by a broken ADC-channel (#2). ADC was replaced so the problem should be solved now.

19:00 Injection. Run Magnet up

19:30 To avoid YVOLTS errors Beate Naroska makes the following changes:
TOF MFR 55 CHAN 17: Reference voltage on DISC from 2739 → 2800 V (The voltage was increased today)
TOF MFR 55 CHAN 25: Reference voltage on DISC from 2700 to 2800 V (— " —)
TOF(not TAG) MFR 56 CHAN 13: Voltage turned down from 2633 → 2625 V (was increased unintensionally this morning)

Mr. Krehbiel improves the red/green beam lights

20:00 Visit of Mr. G. Knies He reports that Cello cannot work because of too high background in the chamber and that Tasso has high background

20:30 Beams with 8 mA each lost at 9 GeV

Notes: Trigger bit 31 (TB6 coll(2) × 2 tr fast coll) is probably high since the cosmic rejection is off on request of T. Nozaki
Spike in TOF mean ADC may be ADC fault. (B.N.)
TOF Histog of last pulses in underflow: Add 12 ns cables

21:13 New fill ready 18 GeV 7.7 + 7.4 mA

21: NORD issues error message:
Write miss ERROR 37; IOX ERROR
ADDRESS 50371; LEVEL(DEC): 1

Phone to D. Cords and H. Krehbiel
Reload Nord doesn't help → hardware error

⇒ No ~~events~~ are read (even not LG ped data)
YPARA 5 is also issued (not data read ---)

this was due to ~~the JET chamber system~~
The crate below the trigger box was off

crate power on
all is OK.

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To ref. ×10⁶	T1 Acc. Sum.	T2 Acc Sum	T1 Bit 2 E₁>6 GeV	T2 Bit 17 2T·E₄·2tr.	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	SLdt Run	SLdt Exp.	IBM TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

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11.11.82

21⁴⁹ Finally start Run (# 12573 , E_{beam} = 17.995)

In this run and also in the next (# 12574 , started 22.02) the display couldn't be used. Therefore reload Nord

22³⁵ Increase Energy to 18.295 GeV

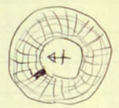
23⁰⁵ during Run # 12575 I install the two 12 nsec cables for the Histog. TOF trying test pulses

YSPY: Missing Muon digitizers. I didn't look at all the messages ("just statistics")
May be #1 is often missing.

23⁴⁰ Standard Histograms

* Tagging Energy histograms are now all there, but high on the scale ⇒ overflow.

* A LEAD glass spinning blocks ✓ cluster still exists: (Barrel RUN 1 ~ 8) ADC ch. 2273 ~ 2280
(at least from R12558)



5.00 12/11/82 D. Darvill / G.F. Pearce

0.47 Beams lost @ 19 GeV. Nice try.

03:08 We have beam again at 19 GeV
PKR are having immense problems achieving & maintaining a reasonable luminosity. They do not know the reason.
We continue to take data with the existing beams while PKR try to understand the problem, though the event rate is painfully slow.

04.14 Beams lost.

5.05 New fill.

6:29 IBM transfer error - run ended — ~~IBM~~ problem went away, run 12579 started.

6:39 Beams lost - ID ran itself down with no alarm - no warning lamps on in racknech.

6:50 PKR call to ask us to turn our magnet down to 1/3 for energy saving.

Problems that still exist: 1) Tagging histograms overflow on ADC's & generally difficult to understand
2) Run printout shows wrong run start beam current values. Colour TV is correct.

see message on 11.11.82 800
H.E.M will fix it

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08.00 Friday 12/11/82 Lutz Becke & Fred Loebinger.

09.45 PETRA still waiting for a transmitter to come up.
Jo Burge (Mark I) says that give the good running conditions achieved during last night at 18.7 GeV, PKR would like to go straight to 18.7 again today (rather than stopping at 18.0 and ramping up ~~to~~ ~~the~~ at the end of the fill). We agree to this.

10.15 Addendum to above. Tasso cannot run at 18.7, but probably OK at 18.5 (Cello can't run at either — or ever any — energy).
Also PETRA people going to investigate r.f. window temps to determine how high they dare go.
At moment power supply problem (burnt cable) RESTART scheduled for 13.00.

11.00 Tagging histogram overflows were caused by non-working system processor in Tagging-crate. Problem is fixed now.

12.00 T2-trigger reads two more words from now on (RAE)

15.00. Stable beams 18.5 GeV.
↑ Hope to accelerate to 19.0 GeV at 16.30.

16.02 Tagging Histograms are now O.K. But then we discovered, that one quadrant of the tagging system is missing. Probably another ADC died. So for runs 12580 ff. the online lumi is too small by a factor 2.

16⁰³ Heinzelmann & Conl

16¹⁰ PKR ~~informed~~ does not inform us before energy ramping
PKR operator H-M. Matthiesen refuses to take any responsibility for not doing so!

17.00 Krabbel noticed that the T1-Accept-Trigger 4 was switched off. (opposite EA and Collinear FW Mu ≥ 1))
Tentatively switched on at the T1-accept-card 4; Next shift should watch it.

21.00 Watching Event-Display with Sel. Trig. 39, which is high in the Histogram.
Many "Five-Ball Events" - About ~~about~~ 1/2 of all TOF on, 90% of BP on, Smearing — as exp.
but 10 not too full, LG Cylinder almost empty, 36 counts, 200 MeV

23¹⁰ electron injection system does not work ⇒ no injection to PETRA

00.00. SATURDAY. 13-11-82. Ian Duerdoth / Takeda. "short break"

02³⁰ New Fill Ready.

Run	Date	Start	Stop	at Run Start I+	at Run Start I−	D.T. (%)	Time (sec)	Records out	All ×10⁶	To rej. ×10⁶	T1 Acc. Sum.	T2 Acc. Sum	T1 Bit 2 E₁>6 GeV	T2 Bit 17 2T·E₄·2tr.	ON/OFF N50	ON/OFF MIP	ON/OFF TOF	<L> ×10³⁰	∫L dt Run	∫L dt Exp.	IBM/TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhabha	MH	Ebeam	Remarks

13/11-82 08⁰⁰ Dietrich Olsson

There is something wrong with bit 31 triggers. Many must have no colinearity in TBG. To be checked!

12¹⁰ New fill, direct to 18,7. BP ~1.5, FWMV triggers very high. DT ~18-20%.

Kuehbiel investigated the trigger problem of bit 31. Conclusion: the card for TBG colinearity needs repair. It is taken out and trigger bit 31 inactivated from R 12592 onwards.

R 12592 stopped early, large beam losses, "Sendraufall".