JADE LOG BOOK VIII Runs 9648 – 11269

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JADE LOG BOOK

Nr. VIII

Runs 9648 – 11269

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	To. reg $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bid 2 $E_\gamma > 6$ GeV	T_2 Bid 17 $2T \cdot E_\gamma \cdot 2\pi r$

Today is the First day
of the rest of your Life !

JAPANESE PROVERB!!

(It's a sign of heaven to start it with a shift !)

correct version

Start the day with a shift – and the whole day can't be bad.

Chinese Proverb (with one word changed)

~~Rejection~~ NSD . MIP TOF	$\langle L \rangle$ $\times 10^{30}$	$\int$ Ldt Run	$\int$ Ldt Exp	IBM TAPE	BP [V]	T2 Rej. Ev. Fr (%)	Bhab.	MH	E_{beam}	Remarks

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9.12.81

0:00 ZHANG, BETHKE on shift

1:40 Stopped run 9649, because PKR will dump the beams.
They will try to fill again, but this many last more than 1 hour (They still have synchrotron problems).
They asked to run down the magnet, so we run it down to 2000 A

4:35 PKR ready for injection, Magnet up to 7500 A

4:45 Start run 9650

6:50 Stopped run, Magnet to 500 A → Energy saving time

8:00 Marshall + Takeda on shift

9:25 New fill ready – magnet trip – too hot Call K. The input water is not being cooled. It seems that the new water valve control system can get stuck after we have been switched off for say 2 hours. The water flow gets throttled and a high operating temp results. No recipe is offered. If there is a temperature trip when starting up, suggest you reset and try again. If that fails, call K and they will manually adjust valve setting to get started.

10:39 New fill ready. RUN 9652 started.

10:50 "NO Triggers" appeared on TV screen, no response from system terminal, and Nord seems to be dead. Called Eichler, and he suggested to restart Nord. We did it and started data Taking again.

" There will be an access from 7:00 – 8:30 10/12 for PLUTO "

11:05 ID tripped due to Anode current.

11:30

11:50 ID tripped due to Beam loss.

14:20 IBM is going down. We stopped run 9654.
RUN 9655 onto magnetic tape.
[On TV screen, there appeared EXP: DOWN. But data seems to be sent to IBM without problem. Anyway we decided to dump data onto magnetic tape for the time being.

Run	Date	Start	Stop	I_+ at Run start	I_- at Run start	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 $E_{cl} > 6$ GeV	T_2 Bit 17 $2T \cdot E_{cl} 2tr$	Rejection NSD	Rejection MIP	Rejection TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T2 Rej Ev Fr (%)	Bhab.	MH	E_{beam}	Remarks
9648	8/9.12.81	22:38	1:35	1.8	3.8	7.0	10547	8002	1558.4	109.8	1668.2	17.1	10255	318	–	7936 ~~447~~	~~7936~~ 1440	2873									
9649	9.12.81	1:36	1:40	1.8	3.7	4.0	226	168	58.9	2.4	56.5	0.14	211	3	–	168	31	57									Beams dumped
9650	"	4:46	6:04	6.9	7.5	12.7	9365	8002	1135.9	143.8	992.1	24.8	10271	434	–	4840	2466	2960									
9651	"	6.06	6.50	6.1	6.9	10.0	2626	3978	683.6	68.9	614.9	12.0	4418	192	–	2733	948	1489									Beams dumped with FADC
9652	"	10:39		9.4	9.6															?	"	0.78				17.509	← Nord dead No ran summary.
9653	"	10:57	11:46	8.3	8.8	10.7	2627	4256	684.0	73.2	610.7	12.3	5320	226	–	2761	1126	10164 (1471)	1320 (539)	6.40	16.81	12002.76	"	0.69	45.6	217	8	17.495	1326	Beams lost.
9654	"	13:33	14:14	9.9	9.7	13.0	2415	4545	628.3	82.0	546.4	15.3	5719	260	–	2747	1367	1699	578	7.60	18.35	12021.11	"	0.70	46.3	239	7	17.495		
9655	"	14:15	15:47	7.9	8.1	8.6	5426	8002	1412.2	121.5	1290.7	24.9	8946	402	–	5376	1845	3063	1067	6.33	34.36	12055.47	TAPE	0.60	42.0	427	9	17.496		Tape # F11113
9656	"	15:49	16:54	5.8	6.1	6.2	3796	4366	988	61	927	10.9	4878	179	–	3322	879	1606	494	4.21	15.96	12071.43	TAPE	045	40.9	209	12	17.473		" F11132
9657	10.12.81	0:08	1:24	7.3	7.8	12.3	4415	8000	1149	141	1008	25.6	10137	464	–	5028	2398	2828	906	6.44	28.44	12089.87	IBM	0.8	45.9	331	13	17.396		
9658	"	1:23	3:02	5.6	6.1	8.4	5910	8002	1538	129	1409	26.3	10086	460	–	6025	2495	2993	714	3.82	22.60	12122.47	"	0.54	45.2	275	5	17.396	1326	
9659	"	3:02	5:17	4.2	4.6	6.2	8026	8002	2089	129	1960	25.7	10858	503	–	7130	2133	2806	412	1.62	13.02	12135.49	"	0.46	46.5	149	3	17.396	1325	
9660	"	5:17	6:40	3.6	4.0	5.0	4861	4661	1265	63.5	1202	12.0	5536	181	–	4061	846	1427	156	1.61	4.93	12140.42	"	0.33	45.8	69	0	17.396	1326	Stop run – Energy Saving.
9661	"	10.02	11:25	6.6	7.0	11.0	4788	8002	1246	137	1109	22.9	10043	361	–	5100	2834	2882	914	6.17	29.53	12169.95	"	0.75	45.6	349	9	17.496	1326	
9662	"	11:25	12:46	4.8	5.3	6.9	4814	5886	1253	86.1	1166	12.9	6966	224	–	4313	1698	2132	706	4.69	22.58	12192.53	"	0.5	42.7	243	10	17.486	1326	dump beams
9663	"	13:13	14:26	7.4	7.3	12.3	4360	8002	1135	139	996	24.7	10270	398	–	4861	3196	2964	893	6.5	28.34	12220.87	"	0.82	46.3	380	11	17.500	1326	
9664	"	14:27	15:02	6.4	6.1	9.4	2082	3170	542	50.8	491	8.0	3923	127		2092	1159	1196	356	5.46	11.37	12232.24		0.7	44.8	153	3		1326	Beams lost.
9665	"	16:18	16:50	8.6	8.8	15.4	2210	4616	575	88.8	487	15.6	6264	241		2739	1355	1712	482	6.96	15.39	12247.63	IBM	78	48.8	169	10	17.512		
9666	"	20:17	21:55	7.5	7.4	15.0	4567	8002	1188	178	1010	25.1	10590	351		4939	2917	2847	938	6.59	30.08	12277.71	"	.82	47.2	396	14	17.508		
9667	"	21:55	22.54	4.1	4.2	7.4	3531	4702	919	68	851	17.3	5769	191	–	3387	1709	1669	471	4.21	15.24	12292.95	"	.5	48.7	189	7	17.500		
9668	"	23:22	0:34	7.0	7.4	11.8	4305	8002	1119	142	976	27.1	10245	387	–	5088	2503	2954	992	7.39	31.80	12324.75	"	.8	46.9	365	8	17.509	1326	
9669	11/12.81	0:35	1:29	5.5	6.0	9.2	3111	4642	809	94.1	735	14.6	5645	215	–	3340	1313	1606	484	5.17	16.10	12340.85	"	.6	43.5	183	5	"	1325	Beams dumped
9670	"	2:03	3:08	7.8	8.0	14.3	3874	8002	1007	144	864	28.6	10128	433	–	4859	2649	2929	942	7.92	30.69	12371.54	"	.9	46.3	405	12	17.509	1326	
9671	"	3:09	4:34	5.9	6.1	9.5	~~5021~~	8002	1323	125	1198	23.8	9275	416	–	5360	2134	3001	944	5.98	30.45	12401.99	"	.63	43.1	377	8	17.496	1325	
9672	"	4:34	4:39	5.8	6.0	7.7	298	403	77.5	5.96	71.5	1.02	477	21	–	305	106	147	45	4.86	1.45	12403.44	"	.45	43.0	18	0	"	1325	Beams dumped
9673	"	5:01	6:10	7.4	7.9	14.0	3894	1002	1012	142	870	26.1	10250	457	–	4670	2542	2918	969	8.04	31.32	12434.76	"	.95	46.8	351	12	17.500	1325	
9674	"	6:10	6.44	6.5	7.0	9.4	2014	3185	524	49	475	8.6	3586	161	–	2024	866	1171	398	6.37	12.82	12447.58	"	.55	41.9	146	2	"	1325	
9675	"	12:11	13.23	8.0	8.6	23.5	4154	7091	1081	254	826	21.6	10027	335	–	4369	2527	2504	697	5.32	22.10	12469.68	"	.70	49.3	296	9	17.500	1325	
9676	"	13:23	13.48	6.4	6.9	10.6	1462	2379	380	40	340	7.3	3276	107	–	1576	809	855	198	4.34	6.35	12476.03	TAPE	.60	47.8	96	3	17.500	1325	Tape F11 121
9677	"	13:47	14.35	6.1	6.6	8.1	2796	3953	727	66	662	12.2	5379	192	–	2913	1217	1394	345	3.96	11.08	12487.11	IBM	.55	47.4	116	3	17.500	1325	
9678	"	15:25	16.04	9.9	10.0	18.7	2264	5183	589	110	479	19.2	6896	322	–	3049	1818	1859	580	8.19	18.55	12505.66	"	.95	47.8	258	11	17.513	1325	
9679	11./12.81	16.07	16.50	7.2	7.4	12.4	2480	4832	646	80	566	15.3	5802	234	–	2933	1493	1821	625	~~8~~ 8.08	20.03	12525.69	"	.73	44.5	242	12	17.496	1325	energ saving time ↓
9680	"	20:41	21:45	7.7	7.9	15.5	3708	8002	964	150	815	28.5	10438	447	–	4752	9661	1862	975	8.40	31.14	12556.83	"	.97	47.2	411	6	17.500	–	
9681	"	21:45	22.40	6.3	6.5	10.4	3269	5577	851	88	762	18.1	6631	261	–	3661	1554	2032	704	6.93	22.66	12579.49	IBM	.65	43.5	306	7	17.491	1326	Beams dumped.
9682	"	23.30	0:35	7.1	7.8	15.1	3746	8002	975	147	828	29.8	10217	476	–	4778	2715	2882	920	7.93	29.71	12609.20	"		46.6	351	6 (5234)	17504	1325	

Run	Date	Start	Stop	I_+	I_-	DEAD TIME [%]	TIME [Sec]	RECORDS OUT	ALL TRIGGERS $\times 10^6$	T0 REJECT $\times 10^6$	T0 ACCEPT $\times 10^6$	T1 ACCEPT + POSTPULSE $\times 10^6$	T2 ACCEPT	T3 ACCEPT	T2 3TOF 3TR	T2 COLLIN	T2 $\geq$ 2TOF LG>1 $\geq$ 2TR	T1 LG>4
9648	8/9.12.81	22:38	1:35	1.8	3.8	7.0	10547	8002	1558.4	109.8	1668.2	17.1	10255	318	–	7936 ~~447~~	~~7936~~ 1440	2873
9649	9.12.81	1:36	1:40	1.8	3.7	4.0	226	168	58.9	2.4	56.5	0.14	211	3	–	168	31	57
9650	"	4:46	6:04	6.9	7.5	12.7	9365	8002	1135.9	143.8	992.1	24.8	10271	434	–	4840	2466	2960
9651	"	6.06	6.50	6.1	6.9	10.0	2626	3978	683.6	68.9	614.9	12.0	4418	192	–	2733	948	1489
9652	"	10:39		9.4	9.6													
9653	"	10:57	11:46	8.3	8.8	10.7	2627	4256	684.0	73.2	610.7	12.3	5320	226	–	2761	1126	10164 (1471)
9654	"	13:33	14:14	9.9	9.7	13.0	2415	4545	628.3	82.0	546.4	15.3	5719	260	–	2747	1367	1699
9655	"	14:15	15:47	7.9	8.1	8.6	5426	8002	1412.2	121.5	1290.7	24.9	8946	402	–	5376	1845	3063
9656	"	15:49	16:54	5.8	6.1	6.2	3796	4366	988	61	927	10.9	4878	179	–	3322	879	1606
9657	10.12.81	0:08	1:24	7.3	7.8	12.3	4415	8000	1149	141	1008	25.6	10137	464	–	5028	2398	2828
9658	"	1:23	3:02	5.6	6.1	8.4	5910	8002	1538	129	1409	26.3	10086	460	–	6025	2495	2993
9659	"	3:02	5:17	4.2	4.6	6.2	8026	8002	2089	129	1960	25.7	10858	503	–	7130	2133	2806
9660	"	5:17	6:40	3.6	4.0	5.0	4861	4661	1265	63.5	1202	12.0	5536	181	–	4061	846	1427
9661	"	10.02	11:25	6.6	7.0	11.0	4788	8002	1246	137	1109	22.9	10043	361	–	5100	2834	2882
9662	"	11:25	12:46	4.8	5.3	6.9	4814	5886	1253	86.1	1166	12.9	6966	224	–	4313	1698	2132
9663	"	13:13	14:26	7.4	7.3	12.3	4360	8002	1135	139	996	24.7	10270	398	–	4861	3196	2964
9664	"	14:27	15:02	6.4	6.1	9.4	2082	3170	542	50.8	491	8.0	3923	127		2092	1159	1196
9665	"	16:18	16:50	8.6	8.8	15.4	2210	4616	575	88.8	487	15.6	6264	241		2739	1355	1712
9666	"	20:17	21:55	7.5	7.4	15.0	4567	8002	1188	178	1010	25.1	10590	351		4939	2917	2847
9667	"	21:55	22.54	4.1	4.2	7.4	3531	4702	919	68	851	17.3	5769	191	–	3387	1709	1669
9668	"	23:22	0:34	7.0	7.4	11.8	4305	8002	1119	142	976	27.1	10245	387	–	5088	2503	2954
9669	11/12.81	0:35	1:29	5.5	6.0	9.2	3111	4642	809	94.1	735	14.6	5645	215	–	3340	1313	1606
9670	"	2:03	3:08	7.8	8.0	14.3	3874	8002	1007	144	864	28.6	10128	433	–	4859	2649	2929
9671	"	3:09	4:34	5.9	6.1	9.5	~~5021~~	8002	1323	125	1198	23.8	9275	416	–	5360	2134	3001
9672	"	4:34	4:39	5.8	6.0	7.7	298	403	77.5	5.96	71.5	1.02	477	21	–	305	106	147
9673	"	5:01	6:10	7.4	7.9	14.0	3894	1002	1012	142	870	26.1	10250	457	–	4670	2542	2918
9674	"	6:10	6.44	6.5	7.0	9.4	2014	3185	524	49	475	8.6	3586	161	–	2024	866	1171
9675	"	12:11	13.23	8.0	8.6	23.5	4154	7091	1081	254	826	21.6	10 027	335	–	4369	2527	2504
9676	"	13:23	13.48	6.4	6.9	10.6	1462	2379	380	40	340	7.3	3276	107	–	1576	809	855
9677	"	13:47	14.35	6.1	6.6	8.1	2796	3953	727	66	662	12.2	5379	192	–	2913	1217	1394
9678	"	15:25	16.04	9.9	10.0	18.7	2264	5183	589	110	479	19.2	6896	322	–	3049	1818	1859
9679	11./12.81	16.07	16.50	7.2	7.4	12.4	2480	4832	646	80	566	15.3	5802	234	–	2933	1493	1821
9680	"	20:41	21:45	7.7	7.9	15.5	3708	8002	964	150	815	28.5	10438	447	–	4752	9661	1862
9681	"	21:45	22.40	6.3	6.5	10.4	3269	5577	851	88	762	18.1	6631	261	–	3661	1554	2032
9682	"	23.30	0:35	7.1	7.8	15.1	3746	8002	975	147	828	29.8	10217	476	–	4778	2715	2882

T1 LUMI	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ RUN	$\int L dt$	IBM TAPE	BEAM PIPE [V]	REJECT FRACTION [%]	* BHABHA	* MULTI HADRON	BEAM ENERGY [GeV]	TDC 85
467	1.44	15.15	11938.77	IBM	0.3	43.7	177	8 (4418)	17.498	1325
7	1.03	0.23	11939.00	IBM	~0.3	41.3	7	0	17.478	–
1003	7.25	31.64	11970.64	"	0.82	47.0	374	6	17.500	1327
477	5.83	15.31	11985.95	"	0.55	41.5	159	7	17.500	1327
			?	"	0.78				17.509	
578	7.60	18.35	12021.11	"	0.70	46.3	239	7	17.495	
1067	6.33	34.36	12055.47	TAPE	0.60	42.0	427	9	17.496	
494	4.21	15.96	12071.43	TAPE	045	40.9	209	12	17.473	
906	6.44	28.44	12289.87	IBM	0.8	45.9	331	13	17.396	
714	3.82	22.60	12122.47	"	0.54	45.2	275	5	17.396	1326
412	1.62	13.02	12135.49	"	0.46	46.5	149	3	17.396	1325
156	1.61	4.93	12140.42	"	0.33	45.8	69	0	17.396	1326
914	6.17	29.53	12169.95	"	0.75	45.6	349	9	17.496	1326
706	4.69	22.58	12192.53	"	0.5	42.7	243	10	17.486	1326
893	6.5	28.34	12220.87	"	0.82	46.3	380	11	17.500	1326
356	5.46	11.37	12232.24		0.7	44.8	153	3		1326
482	6.96	15.39	12247.63	IBM	78	48.8	169	10	17.512	
938	6.59	30.08	12277.71	"	.82	47.2	396	14	17.508	
471	4.21	15.24	12292.95	"	.5	48.7	189	7	17.500	
992	7.39	31.80	12324.75	"	.8	46.9	365	8	17.509	1326
484	5.17	16.10	12340.85	"	.6	43.5	183	5	"	1325
942	7.92	30.69	12371.54	"	.9	46.3	405	12	17.509	1326
944	5.98	30.45	12401.99	"	.63	43.1	377	8	17.496	1325
45	4.86	1.45	12403.44	"	.45	43.0	18	0	"	1325
969	8.04	31.32	12434.76	"	.95	46.8	351	12	17.500	1325
398	6.37	12.82	12447.58	"	.55	41.9	146	2	"	1325
697	5.32	22.10	12469.68	"	.70	49.3	296	9	17.500	1325
198	4.34	6.35	12476.03	TAPE	.60	47.8	96	3	17.500	1325
345	3.96	11.08	12487.11	IBM	.55	47.4	116	3	17.500	1325
580	8.19	18.55	12505.66	"	.95	47.8	258	11	17.513	1325
625	~~8~~ 8.08	20.03	12525.69	"	.73	44.5	242	12	17.496	1325
975	8.40	31.14	12556.83	"	.97	47.2	411	6	17.500	–
704	6.93	22.66	12579.49	IBM	.65	43.5	306	7	17.491	1326
920	7.93	29.71	12609.20	"		46.6	351	6 (5234)	17504	1325

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	To: rej $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 $E_{ep} > 6$ GeV	T_2 Bit 17 $2T \cdot E_\gamma \cdot 2\pi$

Rejection NSD	MIP	TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhab.	MH	E_{beam}	Remarks

9/12/81

16^{00} BARTEL & DITTMANN
Problems with PIA. No refill before 17^{00}. So running with low currents (still on tape).

19^{00} For a start: IBM down
PIA down
RF is being worked on
no beams, no lumi, no events, no physics

19^{30} e^+ back
when raising the magnet current with the Nord pgm MAGNET version 03/11/81 there was no stop around 4500 Amps. Stop manually by pressing 'ESC'
Be careful raising the magnet current by pgm. It did not stop at 7500.
I stopped it by hand at ≈ 7580.

20^{38} Unterbrechung / Break
RF - phase stabilisation kaputt

22^{00} IBM up again
'Injection'

22^{40} Linac II kaputt ; Synchrotron kaputt.

Thurs. 10.12.81

0^{00} Rowe and Matsumura on shift. It is snowing.
also ran the shift then!
As soon as the above two leave we get beam and start a run! (Does this tell us anything?)
PKR want to keep the beams as long as possible for their 'machine studies'.

6^{30} $I^- = 4.04$ mA, $I^+ = 3.67$ and still going! $\mathcal{L}$ is down to 10^{30}.

6^{45} Stop run and run magnet down etc. I think I'll go to bed soon and do some of my own Energy Saving!

8^{00} Stephens and Warming on shift

8^{50} Injection and PKR ask for our magnet to be on.
12:00 Ball takes over from Stephens
Run 9662 in progress.
12:25 Mark J request new fill at 12:45. A bit early, as usual, but reluctantly agree ($\mathcal{L} = 4.3 \times 10^{30}$)
12:46 Stop run 9662 to dump beams + re fill.
15:02 Beam lost ID-trip, anode current.
16:00 ← Marshall + Steiner
16:50 Stay run, run down magnet to 5000 A, energy saving
19:10 Magnet back on 7500 A they try to inject
19:45 they fail to inject, there's trouble at t'RF again.
Run magnet down to 500 A after discussing possible delay with PKR.
20:15 There is life in the RF again run up to 7500 We saved DM150 on running costs in the ½ hour which means DM40 more for the British to spend on electronics for the new outer chamber
20:21 beams back
20:37 Start Run 9666. At the beginning rather high deadtime due to IBM-busy
20:45 4SPY-errors: FWD-chr #14 and 15 missing
20:50 Now these chs also decided ~~also~~ to fire.
21:00 IBM busy again → 30% deadtime
21:30 Mod histograms ok

11-DEC-'81, Friday

0:00 Petersen and Odaka on shift.
1:04 ID alarm ... Anode Current A part of beam was lost.
:30 Beams were dumped.
2:00 New fill
4:23 JDAS ERROR 44 - 703 ; This is the first JDAS-error in this shift.
:40 Beams were dumped.
:59 New fill
5:07 ID-trip (Anode Current) and 'JETCH HIGH CURRENT' on the color TV.
6:45 Beams dumped. Energy Saving Time
:50 Magnet was powered down to 500A.

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 rej $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bid 2 $E_{sum} > 6$ GeV	T_2 Bid 17 $2T \cdot E_{sum} > 2\tau$	Rejection NSD	Rejection MIP	Rejection TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T2 Rej. Ev. Fr (%)	Bhab.	MH	E_{beam}	Remarks

11.12.81

8.00 Naroska & Wagner on shift.
9.45 Switched on HV and magnet. Beams partially lost. Injection
11:22 Still no beam due to various problems with machine; at present synchr is down.
12.13 Start first run of this shift / start with low beam currents however.
12.44 JDAS error 44 SUBE 703
13.10 80-100% deadtime through "IBM hyzzy", IBM cannot do anything, finally find Krönkemeyer. He will go and look.
14.35 beams dumped for new fill

16.00 MINOWA & DAMFORD
16.10 Nord 50 being error message. We reboot NSO and the error problem. Start run 9679.
1655 Energy saving time. run down the magnet to 500 A.
19.10 Show break appears on screen. LINAC I down.
20.05 Bamford & Olsson. PWK filled 10 x 10 mA and test it by hand
20.48 ID temp read OK.
22.39 Beams dumped.

12.12.81

0.00 Goddard & Kanzaki on shift
0.32 ID trip (Anode current & HV output) "&" JDAS error 61 / 312. (et lost partly) Reset it
2.03 Beams dumped.
3.37 FWD TOF no hits : 30, 31
4:23 ID trip. Reset. (Anode current & HV Output)
4.40 JDAS error 45 sub 1
JDAS error 53 sub 140209
5:50 Beams dumped.
6:00 Odaka took over from Kanzaki.
:20 New Fill
We tried to [redacted] start Run 9687, but immediately terminated it because the BP-current jumped up over 1.0 V.
:30 The BP current has gone down to .85, so we started Run 9688.
:55 YSPY error : Forward TOF no hits 30, 31
7:38 ID-Trip (Anode Current)

7:40 'No Trigger' One of the HV main power supply for LG (Barrel 6) was down because of over current. We switched off all HV's, reset an alarm circuit of HV distributor, re-set all distributors, and then continued the run.

8:00 Warming and Hellenbrand on shift
9:00 Row of 48 spinning lead glass blocks detected by looking at the histogrammes. (especially Nr. 32: LG-Barrel 2)
~~stopped Run 9689 and~~
cleared histogramm Nr. 32. New sample showed the same problem.
Stopped Run 9689 and started a new one. This cured the problem.

16:00 Kobayashi and Odaka on shift
16:10 LG thresholds were adjusted. 35 mV
:23 Beams were dumped.
:50 New Fill
- Message on the Writer 'YPARA 8: PED CRT 3 CH 68 IS > 500'
This message has been printed out at the beginings of all runs after run 9690.
- Checking the above problem, we found one more trouble with LG. One of LG-counters (Ring 4, Row 63) is always firing and its ADC-output is high (over flow). This must be due to a ADC or its read-out, because triggers are not affected by it. Anyway, since both troubles do not affect the data-taking itself, we decided to continue the run.

19:35 Beams were dumped for New Fill.
20:00 re-loaded JDAS to check if above troubles are due to softwares.
:35 New Fill
:38 We could not start the run because of no trigger.
:39 re-loaded NORD and JDAS, but the run would not start. } Run 9699 ~ 9701 not exist.
And MP-16. TOF.BP is OFF even after pedestal run.
:45 turned on MIPROC by F19, and then run started. (Troubles with LG were not cured.)
21:20 ID-trip (Anode Current)
:28 JDAS error 44 - 703
:38 "

22:10 Checking data of pedestal-run, it was found that the reasonas of above troubles with LG were same. Namely they were due to only one ADC, the output of which is always 'over-flow'.
:57 Beams lost
23:10 Message on TV turned to 'BREAK'. --- MAGNETSTÖRUNG.

Run	Date	Start	Stop	I_+ at Run start	I_- at Run start	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 $\times 10^6$	T_1 Acc Sum	T_2 Acc Sum	T_1 Bid 2 $E_T > 6$ GeV	T_2 Bid 17 $2T \cdot E_T \cdot 2T$	Rejection NSD	Rejection MIP	Rejection TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T2 Rej Ev Fr (%)	Bhab.	MH	E_{beam}	Remarks
9683	12.12.81	0:36	2:02	5.5	6.1	8.8	5140	7675	1337	118	1219	24.0	9000	340	—	5526	1856	2868	918	5.76	29.62	12639.82	IBM	0.60	43.3	369	13	17.500	1325	Beams dumped
9684	"	2:39	3:44	7.7	7.8	14.0	3896	8002	1014	142	872	29.6	10040	492	—	4834	2618	2965	958	7.97	31.07	12669.89	"	0.9	46.3	382	11	17.505	1326	
9685	"	3:44	5:08	5.9	6.0	10.6	4885	8002	1271	134	1137	27.7	9629	433	—	5587	2191	2975	916	6.08	29.70	12699.59	"	0.7	44.4	356	16	17.499	1325	
9686	"	5:08	5:49	5.3	5.4	8.4	2420	3323	630	53	577	11.1	4017	156	—	2543	835	1240	320	4.27	10.32	12709.91	"	0.55	43.6	139	3	17.496	1325	Beams dumped
9688	"	6:32	7:37	7.7	7.8	14.0	3879	~~8002~~	~~1646~~	~~145~~	~~868~~	29.0	10233	497	—	4915	2736	2851	871	7.24	28.07	12737.98	"	.85	46.3	339	13	17.513	1326	
9689	"	7:37	9:04	5.9	6.1	9.6	4408	6779	1147	110	1038	20.4	8134	293	—	4620	1983	2504	765	5.59	24.64	12,762.62	"	.65	437	302	11	17.500	1325	
9690	"	9:05	9:45	5.3	5.5	7.3	2471	3063	628	46	582	8.7	3627	155	—	2281	765	1088	342	4.52	10.90	12,773.52	"	.48	42.9	178	4	17.506	1326	beams dumped
9691	"	10:21	11:36	7.5	7.5	14.4	3962	8002	1030	149	882	25.6	10580	440	—	4830	2850	2851	897	7.23	28.66	12,802.18	"	0.82	47.4	304	9	17.506	1325	
9692	"	11:30	12:58	5.9	5.8	9.7	5272	8002	1371	133	1239	24.4	10149	354	—	5748	2353	2974	850	5.76	27.78	12,829.36	"	0.58	45.5	313	14	17.504	1325	beams dumped
9693	"	13:33	14:38	7.6	7.7	14.4	3903	8002	1016	146	870	27.6	10538	421	—	4915	2499	3039	876	7.16	27.95	12,857.31	"	0.88	47.5	341	14	17.513	1326	
9694	"	14:39	16:12	5.5	5.7	8.5	5447	8002	1418	121	1297	21.2	9348	348	—	5625	1856	2885	947	5.67	30.87	12.888.18	"	0.65	42.5	349	11	17.506	1326	
9695	"	16:12	16:21	5.4	5.6	7.0	477	680	124	8.74	115	1.35	734	30	—	433	162	197	62	4.07	1.94	12.890.12	"	0.4	35.5	20	0	17.495	1325	Beams dumped
9696	"	16:53	17:51	7.9	7.9	16.6	3489	8002	908	150	757	26.9	10832	445	—	4408	3544	2818	928	8.61	30.04	12920.16	"	0.9	48.4	348	12	17.501	1326	
9697	"	17:51	19:12	5.5	5.7	10.2	9541	8002	1260	128	1132	22.5	9740	369	—	5189	2642	2880	996	6.64	32.13	12952.29	"	0.7	44.7	372	9	17.491	1325	
9698	"	19:13	19:31	5.2	5.4	7.6	1113	1460	290	21.9	268	3.73	1780	63	—	1085	408	516	195	5.01	5.58	12957.87	"	0.45	43.9	58	2	"	1326	Beams dumped
9702	"	20:51	22:03	7.0	6.9	12.7	4496	8002	1092	138	953	23.5	10259	380	—	4748	2993	2957	963	7.20	30.22	12988.09	"	0.8	46.7	359	11	17.496	1325	
9703	"	22:04	22:57	5.8	5.8	8.0	3094	4276	805	64	741	10.6	5169	152	—	3024	1237	1570	498	5.12	15.84	13003.93	"	0.5	43.6	200	3	"	1326	Beams lost
9704	13.12.81	0:12	1:14	7.8	7.9	16.1	3516	8002	915	148	767	26.6	10522	441	—	4565	3186	2938	928	8.45	29.72	13033.65	"	0.92	47.6	352	11	17.507	1326	
9705	"	1:14	2:34	5.9	6.0	10.8	4793	8002	1246	135	1112	24.0	9769	321	—	5257	2570	3037	927	6.23	29.87	13063.57	"	0.65	447	380	12	17.494	1326	
9706	"	2:34	2:41	5491,66		7.9	302	486	78.6	6.2	72.4	1.1	487	18	—	294	140	156	52	5.49	1.66	13065.23	"	0.45	34.5	27	0	17491	—	Beams dumped
9707	"	3:44	4:48	7.9	7.8	14.3	3847	8002	1001	143	858	27.8	10454	455	—	4979	2448	2899	891	7.42	28.56	13093.71	"		47.0	344	13	17.506	1326	
9708	"	4:48	6:10	6.0	6.0	9.9	4882	7857	1271	126	1145	22.4	9289	370	—	5184	2049	3016	975	6.39	31.20	13124.99	"	0.65	439	363	11	17.496	1326	Beams dumped
9709	"	6:43	7:43	8.1	7.9	16.8	3545	8002	923	155	768	29.7	10870	507	—	4761	2798	2928	887	8.37	29.67	13154.66	"	1.05	48.8	345	11	17.506	1326	
9710	"	7:43	9.00	8.07	7.88	11.4	4579	8002	1192	136	1056	27.5	10074	450		5382	2491	3020	879	6.16	28.20	13182.86	"	0.75	458	355	14	17.504	1325	
9711	"	9.00	9:08	6.38	6.22	9.7	390	612	101	9	91	1	~~760~~ 3179	26	—	427	209	205	64	5.30	2.07	13184.93	"	0.57	42.9	24	1	17.504		Stopped by mistake: mode. F2 (taste) led to run stop. IBM Error. YDAS was in the YES/NO
9712	"	9.09	9.41	?	?	10.4	1892	2664	492	51	441	7,8	~~799~~	99		7903	333	1018	272	4.58	8.66	13193.59		0.57	43.0	104	2	17.500		Stopped for IBM Error
9713	"	9.46	10.40	5.27	5.15	6.9	3170	3830	826	57,1	769	10,4	4663	172		3018	7035	1405	347	3.47	11.00	13204.59	Tape	0,47	43.3	143	6	17.506	1325	Tape No F11099 . Stopped because IBM up again
9714	"	10.40	11:09	4.61	4.50	6.2	1653	1813	430	26	403	4.7	2224	71		1493	494	690	156	3.06	5.06	13209.65	IBM	0.42	43.4	50	1	17.500		
9715	"	20[99]	21[35]	9.74	9.46	18.1	2622	5805	682	123	558	20.5	8915	~~308~~	—	3330	2718	1998	519	6.65	17.43	13217.08	"	1.0	52	207	9	17.513	1326	Bunch-clock has moved by ~7.5 nsec (TestTDC67) + lack of air
9716	"	22[00]	23[00]	10[01]	9.05	16.9	3633	8002	919	155	764	29.7	11218	467	—	4709	3206	2975	868	7.77	27.44	13234.56	"	1.05	49.5	334	12	17.504	1327	NEW FILLING.
9717	"	23[99]	00:16	8.14	7.71	12.3	4529	8002	1178	144	1034	28.4	10078	479	—	5250	2599	3002	852	6.00	27.18	13261.74	"	0.74	45.8	281	18	17.503	1327	
9718	14/12/81	00:16	00:45	6.0	5.3	9.1	1710	2487	445	40.5	404	8.5	3174	131	—	1829	765	904	261	4.92	8.42	13270.16	"	0.55	45.7	101	3	17.501	1326	beams dumped
9719	"	01[22]	2[26]	8.0	7.7	17.1	3548	8002	922	158	765	29.3	11325	487	—	4619	3638	2913	824	7.42	26.34	13296.50	"	1.05	48.3	301	6	17.501	1327	
9720	"	02:26	03:42	6.2	6.0	11.2	4539	8002	1180	132	1048	24.6	10149	350	—	5065	3144	3023	897	6.32	28.68	13325.18	"	0.5	45.9	355	10	17.496	1326	

Run	Date	Start	Stop	I_+ at Ring start	I_-	DT (%)	Time (s)	Rec out	All ×10⁶	T_0 red ×10⁶	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 E_{sp} > 6 GeV	T_2 Bit 17 $2T \cdot E_4 \cdot 2\tau$	Rejection NSD, MIP, TOF	⟨L⟩ ×10³⁰	∫Ldt Run	∫Ldt Exp	IBM TAPE	BP [V]	T2 Rej. Ev. Fr (%)	Bhab.	MH	E_{beam}	Remarks

13. R. 81

0:00 Minowa, Wriedt

0:38 ID-trip

0:42 JDAS Error 44, Suberror 703, Task 1

0:47 —·—

2:50 ID trip. But the Alarm cannot be reset. The alarm is #7 HV-input and #8 HV-output.
Call Hellenbrand. run 9706 stopped.
Beams dumped for the next fill.
Hellenbrand fixes the problem: probably a spurious alarm.

5:13 ~~5:44~~ JDAS Error 44, Suberror 505, Task 1

6:44 JDAS Error 44, Suberror 703, Task 1

6:52 —·—

7:53 We collected 157.76 nb⁻¹.

8.00 Krahbiel + Nozchi on Shift. YHMON Histogram abscissa scales expanded for clarity.
List filed is YHMON Histo folder.

Wonders: in spite of low trigger rate (ca 3/sec) Deadtime above 10% (30 msec per Event!)
For the Leadglass experts: see Line Printer outputs. 1 Pedestal error.

9.09 IBM error (transient). Went away by new run start.

9.18 M.J. phoned: we take that PKR has problem with the synchrotron and therefore they want to keep the present beam as long as possible. SUBER ERCNT

9.19 IBM Transfer error: 00054 · 140000 00005
try again
IBM Transfer error 00058 SUBER 140000 ERCNT 000000
try again OK.

9.41 IBM finally down. We write on tape. On PETRA Display it say still EXP on AA. Complain about this, because we want reliable information. Finally after 10 min the Display says "Exp down"

Questions to JDAS programmers: ~~Why does~~ When we write on tape, why does colour display say
IBM Online Comp. up when it is down?
Old Counts to IBM and not Records on Tape?

10.26 YHMON Histog. seem to have shifted 1-4 ca 4 channels down. Reason possibly low beam current.

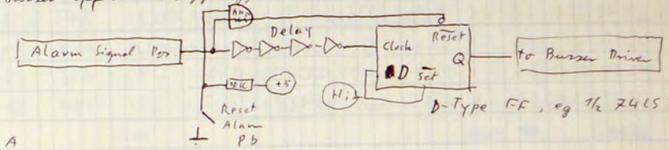
10.28 YSPY detects error. Forward Mu counter ~~no~~ TOF No hits. 30 37. In histogram these are a bit low. Wait ~~for~~ a bit. Histogram looks as before. No action taken

10.39 IBM up again. We stop Run

11.10 Beam lost

? PETRA has problem with synchrotron vacuum. An Air Conditioner Pack had leaked water into some HV supplies for Ion Getter pumps at DESY. HV supplies are wet. Why did they ~~not~~ arrange these two items in such a dangerous configuration?

11.40 I noticed an ID alarm pending with buzzer off! I strongly suggest a new buzzer control logics for F11 with a Pushbutton instead of a switch



11.40 ~~Start~~ JADE Magnet down to 500 A
Energy saving.

15.59 ~~PETRA~~ is still down.

16.00 Hoodsveek + Steffen on shift.
PAR: They will soon start to set up injection, but there will probably be no beam before 17ee

20.49 Finally we have some beam + short running

21.23 Boehrs Test histograms show #1 being empty. After some discussion with Krahbiel (Boehr, like always when I need hr, is unreachable) it was found the the bunch clock pulse is shifted by ~ 7.5 nsec (early) and has run out of scale of the histograms of Test TDC #1. I readjusted the scale in histogram #7 which should be displayed ~~of~~ instead of #1

21.35 In the meantime the bunch clock has jumped back to ~1445 channels also TDC 3+4 shows 2 peaks.
And in the meantime the beam has been lost. We wait for a new fill.

14/12/81 00:00 Boehrs and Felst on shift. (The last shift of 1981)

04:00 Half-way and no problems encountered.

06:10 JET chamber trip. Alarm #7 HV input : #8 HV output.
We had to phone Hellenbrand to find out how to reset it.

06:34 Another ID trip. Some spurious cause.

06:45 And another. (turned off the buzzer and left the alarms on for the experts)

06:48 === END OF THE 1981 DATA TAKING ===

turned magnet down to 500 A

07:15 ran magnet down and switched circuits off and went home

Run	Date	Start	Stop	I+ at Run start	I− at Run start	DT (%)	Time (s)	Rec out	All ×10⁶	T_0 rej ×10⁶	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 $E_{cl} > 6$ GeV	T_2 Bit 17 $2T \cdot E_{cl} \cdot 2\tau_{cl}$	Rejection NSD	Rejection MIP	Rejection TOF	$\langle L \rangle$ ×10³⁰	$\int L dt$ Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhab.	MH	E_{beam}	Remarks
12 RUN	DATE	START	STOP	I^+	I^-	DEAD TIME %	TIME (SECS)	RECORDS OUT	ALL TRIGGERS ×10⁶	TØ REJECT ×10⁶	TØ ACCEPT ×10⁶	T1 ACCEPT +POSTPONE ×10⁶	T2 ACCEPT	T3 ACCEPT	T2 3 TOF 3 TR.	T2 COLLIN.	T2 ≥2 TOF LO ≥1 ≥2 TR.	T1 LG > 4	T1 LUMI	$\langle L \rangle$ ×10³⁰	$\int L dt$ RUN	$\int L dt$ 13325-18	IBM/ TAPE #	BP (V)	REJECT EVENT FRACTION %	# BHA BHA	# MULTI HADRONS 5549	E_b GeV	TDC 85	
9721	14/2/81	03:42	03:59	5.8	5.6	8.4	1021	1471	265	22	243	4.01	1766	66	–	202	460	554	164	5.12	5.22	13330.40	IBM	0.5	43.8	56	1	17.491	1326	beams dumped
9722	"	4:41	5:34	8.4	8.2	20.3	3785	8002	830	168	662	29.9	11854	469	–	4308 ~~1024~~ 2453	4359 1921	2845 1477	765	7.59	24.26	13354.66	"	≈1.0	57.4	273	9	17.509	1327	
9723	"	05:34	06:17	7.3	7.1	15.9	1899	4040	494	79	416	15.3	5722	254	–				368	6.24	11.86	13366.52	"	0.8?	49.5	160	6	17.500	1326	JETC trip
9724	"	06:23	06:45	6.7	6.5	12.9	1163	2188	303	39	264	6.99	2849	102	–	1365	910	736	209	5.69	6.62	13373.14	"	0.7	46	91	3	"	1326	JETC trip & then energy saving began
~~9725~~	"	~~11:48~~	~~12:02~~																								5549			
9725	"	11:48	12:02	–	1.63	2.7	770	457	200	5.4	195	0.55	639	10	–	543	74	136	–	–	–	–	IBM	0.22	42.7	–	–	18.712		Electrons only, 2 bunches, high energy Bunches
9726	"	12:25	12:40	–	2.26	3.6	805	495	209	7.5	202	0.53	652	6	–	515	83	138	–	–	–	–	"	0.15	41.9	–	–	17.504		Single beam beam lost
9727 – 9761		Lead glass test runs written on tapes																												
9762																														
~~temp~~																														

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Run	Date	Start	Stop	I_+ at Run start	I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 rej $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bid 2 $E_\gamma > 6$ GeV	T_2 Bid 17 $2T \cdot E_\gamma \cdot 2\tau$	Rejection NSD	MIP	TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T2 Rej. Ev. Fr (%)	Bhab.	MH	E_{beam}	Remarks

14 14.12.81

Test with high energy electron beam

PKR ~~first~~ tunes first 1000 MHz system and then at 17,5 GeV the 500 MHz system

10^{05} Magnet to 4000 A, then to 7000 A

10^{20} PETRA has reached 17.5 GeV with two beams $I^+ = 2.3$ mA, $I^- = 2.3$ mA

Magnet do 7500 A

Beams lost at accelleration over 17.5 GeV

11^{38} Bunch E2 0.91 mA

Bunch E4 0.91 mA

E = 18.712

no positrons

BP = 0.22 V

11:48 – 12:02 Run 9725 to IBM Beam lost

12.25 For comparison Run 9726 at 17,5 GeV

There was no other fill at high energy before the end of the test time at 15°°. Rej

16th DECEMBER 1981 = 10^{35} HRS.

I HAVE SWITCHED ~~THE~~ MASTER FREIGABE SWITCH TO ~~INJECTION~~ ~~MAIN~~. THIS IS TO ENABLE THAT I CAN ~~DISABLE~~ ENABLE THE TAGGING HV SWITCH ~~BACK~~ MODULE.

C.R. HEDGECOCK!!!

15

Run	Date	Start	Stop	I+ at Run start	I−	DT (%)	Time (s)	Rec out	All ×10⁶	To. rej ×10⁶	T1 ACC Sum	T2 ACC Sum	T1 Bit 2 E_cl>6 GeV	T2 Bit 17 2T·E_t·2π	Rejection NSD	MIP	TOF	⟨L⟩ ×10³⁰	∫Ldt Run	∫Ldt Exp	IBM TAPE	BP [V]	T2 Rej. Ev. Fr (%)	Bhab.	MH	E_beam	Remarks

New Running – February 1982

22⁰⁵ Thursday February 4th

We see the new leadglass triggers on Event display

Ozone in the hall. Kontr. Techniker believes it being blown out of PETRA tunnel.

FRIDAY 5TH FEBRUARY

00:00 Kristin Ball / ムカイヨシエ M. Minowa : No magnet, no beam, no hope!

Previous shift reported pr crate 8 missing in test runs. Trig reset pulse missing – was pulled out at discriminator in rackrack. All pr crates now present in test run.
Continue tests on pr-chamber gas simulation started yesterday afternoon. Looking at effect of shutting off each of the four feed/return branches in turn.
K-people informed. (3686).

4/2/82	16:00	close valves ①	(stairs to pit)
	17:00	open valves ①	
5/2/82.	01:15	close valves ②	(corner of pit near control room)
	01:55	open valves ②	
	02:30	close valves ③	(far side, away from stairs)
	03:00	open valves ③	
	03:30	close valves ④	(far side near stairs to pit)
	04:00	open valves ④	

02:35 beams ready in PETRA.
02:40 try test run no ID. readout path 7733¼B. trig area 2400B.
luminosity 2.9×10^{30} trig rate 0.7 Hz
03:27 stop run to dump beams + refill ~2000 evts taken. took standard histograms.
04:15 Beams ready.
measurement of T1 trigger rate by the Scaler. (new LG trigg.) (Ebeam = 17.495 GeV, I+ = 6.7 mA, I− = 6.4 mA / Jade magnet off.)

T1 bit		rate / 100 sec
2	Etot > 3 GeV	30.
9	$(E_{C1} * E_{C2})_{300\,MeV}$	27.
10	(Barrel > 1 GeV) * $(E_{C1} + E_{C2})_{300\,MeV}$	5.
12	Barrel > 1.5 GeV	23.
OR.		75.

7733¼B

5.2.82
06:45 Energy Saving Time.

Leadglass total energy thresholds.

4 thresholds for TOTAL & BARREL SUM. (common threshold for E_{tot} & B_{tot})

		DVM	
①	6 GeV	1998 mV	
②	3 GeV	1998 "	← used for $E_{tot} > 3$ GeV
③	1.5 GeV	1995 "	← used for $B_{tot} > 1.5$ GeV
④	1 GeV	1330	← used for $B_{>1} \cdot (E_{C1}+E_{C2})_{>0.3}$, also for T2 $2TR \cdot (E_{tot} > 1\,GeV)$

4 Thresholds for E.C. (common to E+ & E−)

		DVM	
①	1 GeV	305 mV	} can be used as luminosity monitor (after some study)
②	0.5 "	305	
③	0.3 "	366	← used for $E_+ \cdot E_-$ & $B_{>1} \cdot (E_- + E_+)_{>0.3}$
④	0.2 "	244	

11⁵⁰ 17.5 GeV Beams, ~~I+~~ ~~I−~~ = 7.2 mA I− = 6.9 mA

Beate attacks the TOF cables

16⁰⁰ Ph. Rowe + A. Wagner
Test runs for LG proceeding
next steps to take: wait for magnet repair (Tel # 3389)
get TOF system working
check Trigger

16⁴⁵ Energy saving

19³⁰ Magnet on

20²⁰ I.D. Trip then beams lost soon afterwards.

22¹⁵ Magnet trip (Rücklauf > 50°)
K-group checks Trafo oil again. seems ok. But you still might have problems with occasional airbubbles

Run	Date	Start	Stop	I+ at Run start	I−	DT (%)	Time (s)	Rec out	All ×10⁶	To ×10⁶	T1 ACC Sum	T2 ACC Sum	T1 Bit 2 E4>6GeV	T2 Bit 17 2T·E4·2τ

~~Rejection~~ NSD	MIP	TOF	⟨L⟩ ×10³⁰	∫Ldt Run	∫Ldt Exp	IBM TAPE	BP [V]	T2 Rej. Ev Tr (%)	Bhab.	MH	E beam	Remarks

6TH FEBRUARY 1982

00⁰⁰ M^Cann & Kangaki on shift. The place is full of people!

All TOF counters working in bitmap, mean TDC 1, mean TDC 2 has some holes still will be fixed later.

FORWARD μ-counters off for the night!

00²⁵ Beams dumped.
00:30 Tagging HV-MFR 61 exchanged & HV-values reset to the normal ones.
00:40 Everyone has gone now — no-one wants to be called out during the night!
2:00 Magnet trip. "Rücklauf < 35°C" is ON
Called K group.
3¹⁰ Problem found — reckoned to be spurious transformer fault
Taking data again.
4²⁰ Beams dumped.
5⁴⁵ Now filling.
7:58 Magnet trip. Rücklauf < 35°C is ON. Called K group.
8:00 Beth + Beethe on shift.
8:21 Magnet found to be leaking oil. K group do not want to try to fix it now. They say the magnet will probably trip every 5-6 hours. When it does we should phone them and they will temporarily fix it. So we should phone them every 4 hours to fix it.
8:25 magnet powered up
8:38 YSPY ERROR: MUON DIGITISER MISSING.
8:45 " " " 84. Can't see anything wrong in the muon histograms.
8:49 Beams dumped.
9:00 "SHORT CRASH"
10:48 New fill.
10:50 Runs 10006 – 10008 only have 2 events each due (error during) LG PED ~~ERROR~~ run.
11:20 Fastbus 048 error messages. Data taking stopped
11:50 "Muon crate missing 12" off for about five minutes.

← Trigger Bits at Midnight.

Accept Bit		No	Postpone	T2
2	= $E_{\#2}$	(17)	1 2 ToF · E_4	} * 2 T tracks
9	= $(EC_1 \cdot EC_2)_3$	(19)	3 $(EC_1 \cdot EC_2)_1$ * 2 TBG	
10	= $(EC_1 + EC_2)_3 \cdot B_4$	(25)	9 1 TBG * B_4	* 1 Track
12	= $B_{3\#}$	(29)	13 2 $T_{coll\pm3}$ (≥ 5 T)	} 2 coll Tracks.
		(30)	14 2 $T_{coll\pm1}$ (≥ 7 T)	
		(31)	15 2 $TBG_{coll\pm1}$	

Run 10010 Nord 50 Busy — Memory out of range at 154576
Arithmetic overflow
BP 077140
BG 100000

12²⁰ PLESSEY Miproc switched on from run 10012 onwards: only ~~trigger clock~~ ~~12 output~~ effective
~ 12²⁰ several time-outs in 502/503. additional to that some low DL8's in the "wire-mess".
After several checks and changes of DL8's, all (non reproducible) errors disappear.
But: it might happen again because of some possible bad connections.
If it comes again, push cables and DL8's (also crate-controller).
13:53 Beams dumped.
Digitiser plugs for muon chambers 267 → 274 were not properly connected — hence gap in muon histmap & YSPY message.
→!
16⁰⁰ Allison, Kobayashi ← see previous page.
16⁰⁰ Called K group to look at magnet. It turned out that the K-group had inspected the magnet at 15⁰⁰, without informing us. They say they will inspect it regularly. Next shift please check.
16³³ PKR say: they are studying beam loss at ca. 9 GeV. This may take ½ hour, or 1 hour, or longer!
17⁵¹ PKR say: they have learnt nothing yet, so do not expect beam in less than 1 hour. Could be longer.

19⁰⁰ Run with MIPROC-16 OFF until further notice. PDi
19⁴⁰ Magnet trip. Rücklauf < 35°C is ON. Called K group.
21⁵⁸ Magnet replaced. Now running at 7500 A.
PKR still trying to work out new ramping procedure. (We were told that new power supplies have been installed during the shutdown and the ramping algorithm has to be optimised again. Experts are now working on it.)
22¹⁰ Magnet at 500 A.

Run	Date	Start	Stop	I_+ at Run start	I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 rej $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 $E_{\gamma} > 6$ GeV	T_2 Bit 17 $2T \cdot E_{\gamma} \cdot 2\pi$	Rejection NSD	MIP	TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T2 Rej. Ev. Fr (%)	Bhab.	MH	E_{beam}	Remarks
10000	6.2.82	03 13	03:56	6.8	7.4	8.6	2420	8002	630	53.9	10.6	4997						2.51	6.07	6.07	IBM	0.20	0	53	2	17.496	
10001	"	03:57	04:33	6.3	6.9	7.9	2197	6804	572	45.2	9.1	4120						2.38	5.23	11.30	"	0.10	0	67	3	"	Beams dumped
10002	"	05:52	06:38	7.0	6.1	7.3	2747	8002	715	52.3	9.3	4657	—					3.89	10.70	22.00	"	0.15	0	144	3	"	
10003	"	06:39	07:28	6.3	5.5	7.1	2935	8002	764	54.4	9.9	4682	—					3.57	10.49	32.49	"	0.10	0	129	5	"	
10004	"	7:28	8:00	6.0	5.2	6.4	1949	4445	481	30.6	5.9	2873	—					3.47	6.41	38.9	"	0.05	0	69	3	"	Magnet trip
10005	"	8:35	8:51	5.4	4.7	8.6	978	2407	254	21.9	2.7	1357	—					2.99	2.92	41.82	"	0.04	0	22	0	"	Beams dumped.
10009	"	11:00	11:26	6.9	7.3	13.0	1443	4212	375	48.9	3.6	2456	—					3.79	5.46	46.28	"	0.20	0	31	0	"	Fanley OL8
10010	"	1140	11.49	6.5	7.0	7.4	518	1667	134	10	1.4	914	—					4.23	2.19	48.47	"	0.12	0	22	1	"	Nord 50 crash
10011	"	1152	1208	6.3	6.7	12.2	842	2521	219	26	1.92	1477	—					6.1	3.45	51.92	"	0.12	0	35	2	"	PLESSEY-MIPROC ON ~~FROM~~ RUN 10012, 10013
10012	"	1225	12:31	6.0	6.4	11.8	243	693	738	87	6.1	0.9	485	—				6.08	1.15	53.07	"	0.10	0	16	0	"	run stopped because of trouble with CRB's (may be faulty register)
10013	"	1253	1354	5.0	5.4	6.4	3671	7817	955	609	894	12.6	5682	—				3.53	12.96	66.03	"	0.08	0	179	5	"	Beams dumped.
10033	7.2.82	11.10	~11.30															given 0.5		66.53							Nord 50 not used. recommended to reload N50.
10034	"	11.37	12.09	4.1	4.3	5.5	1898	4343	496	27.1	467	5.2	2528	—				2.15	4.07	68.68	"		0	57	3	"	Beams Dumped.
10035	"	13.33	14:20	5.2	6.8	7.0	2999	8002	428	~~37.0~~ 67	672	9.4	4712	—				~~2.18~~ 2.57	4.18	75.86	"	.15	0	81	4	"	
10036	"	14:20	15:11	4.6	6.2	6.7	3010	8002	483	52.6	430	9.9	4744					2.24	6.74	82.60	"		0	82	0	"	
10037	"	15.27	1627	3.9	5.4	6.4	3496	8002	909	579	851	9.9	4678	—				2.05	7.15	89.75	"	?	0	78	3	"	Tag a Lumi trig on during X Run
10038	8.2.82	7.10	junk																		~~FFFFF~~					cosmic ray	All LUMI-events until run 10110 (incl.) are junk.
10039	"		junk																								
10040	"	7:41																			~~FFFFF~~					cosmic ray	crazy data. deleted
10041	"	9:51	14,47					10827													~~FFFFF~~ FF11	180					
10042	"	14:54	16.21					2755													FF1117					cosmic ray.	
10043	"	16,40						1260													FF1145					Pulser ID	
10044	nothing																										
10045	"	17,07						1760													FF1143					Pulser ID	
46&47		BOTH		RUNS		LOST		(MISSING		AT	LEAST)																
10048	09/2/82	23^{25}	00^{44}	4.8	4.7	8.5	2933	8002	763	65	698	8.6	5097	—				3.17	9.30	99.05	IBM		—	98	1	17.496	FOLLOW THAT !!!
10049	10/2/82	00^{45}	00^{54}	4.5	4.4	8.1	2339	5999	608	49	559	6.5	3843	—				2.63	6.15	105.20	"		—	86	9	17.496	BEAMS DUMPED.
10050	"	15^{28}	15^{58}	7.1	7.3	24.26	1814	8002	472	114	358	7.4	3963	1906				4.08	7.40	142.60	"		—	92	1	"	
051	"	15^{59}	16^{28}	6.7	7.0	17.6	1357	5839	353	62	291	5.7	3303	887				4,30	5.84	118.44	"		—	86	—	"	
10052	10/2/82	16:25	16.50	6.3	6.6	10.1	1455	5211	378	38.4	340	5.0	3195	101				4.43	6.45	124.89	"		—	79	2	17.496	Beams Dumped
10053	"	19.36	20:17	6.9	7.3	8.9	2465	8002	641	57.3	584	6.2	4852	191				3.21	7.91	132.80	"	0.45	—	78	2	"	
54	"	20:18	21.02	6.4	6.7	12.5	2653	8002	670	86.3	603	6.1	4602	184				3,54	9.40	142.20	"	04		114	3	"	
55	"	21.02	21 17	6.2	6.5	9.1	866	2774	225	20.5	205	2.1	1616	74				3,32	2.88	145.08	"			43	2	"	
56	"	21.27	21.33	6.0	6.3	5.5	322	726	84	4.5	79	.85	373	22				3.76	1.21	146.29	"			11	0	"	

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All ×10⁶	To rej ×10⁶	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 $E_{sum} > 6$ GeV	T_2 Bit 17 $2T \cdot E_{sum} > 2$ GeV

Rejection NSD	MIP	TOF	⟨L⟩ ×10³⁰	∫Ldt Run	∫Ldt Exp	IBM TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhab.	MH	E_{beam}	Remarks

22¹⁰ Magnet at 500 A.

7 th Feb.

0:00 Odaka & Kawabata on shift.
0:20 "KURZE UNTERBRECHUNG" on TV.
PKR has a problem with regulator of cavity.
2:30 start injection.
4:30 Magnet trip. (Oil leakage). K group fixed it temporarily.
6:30 Magnet powered up.
7:00 "Luminosity-Run". But beam currents are very low ($I^+ = 5.87$, $I^- = 5.70$).
:14 Run 10014 started, but automatically terminated because of JDAS error 56 (suberror 550).
CURE
08⁰⁰ Duerdoth & Sato.
Problems with starting runs. Turned MIPAC & ACP099 off. also reloaded NORD 10. Runs 10014 – 10020 :- have only 2 events
08⁴⁵ Beams back.
-10⁰⁰ New fill – SYS Run 56. --- Its a loose contact in bracket crate 3. – the ADC in slot 11 (the middle one of a group of 3).
JUST WAGGLE IT.
11¹⁰ Start Run 10033 ✕ no Run Summary. (Runs 10014 – 10032 only 2 events). We are running without NORD 50 (D. Cards is coming).
11 stopped – to fix the NSO. The NSO progr was messed up. If happens again – use ABORT-NSO & start new run.
11³⁴ Start Run 10034 – NSO operating again.
12⁰⁵ Beams dumped.
13³⁹ New fill. start run 10035 Muon Crate Missing #8: press reset on the crate. – still get missing crate every few minutes (always #8).

HV Read Error #3 comes every ½ hour. :- supply 63.

15.46 Switched on tag and lumi triggers. Rate low enough.
16:00 KAERBER, BELL ON SHIFT, beams dumped
17:00 PKR asks to run down magnet for test purposes
18:10 "LINAC 2 TROUBLE"
19:18 PKR expects LINAC 2 trouble to last for at least another ½ hour.
20:40 Still no beam. Message on TV " THYRATRON EXCHANGE LINAC 2" Expect it to take an hour or so.
23:00 " STILL TROUBLE WITH L(INAC) 2 " on T.V.
23:45 " " " " " " " Phoned TASSO, They said PKR don't know how long it will take to fix the trouble.

To Shift Crews

1) If you suspect trouble (such as the waggling ADC) **DONT** try a run to the IBM – you will only end up with lots of small runs (eg 10014–10020 !) Do a **TEST** run with data NOT written for a few seconds first.

2) If the Nord-50 goes busy (see colour TV) for more than a few seconds it has probably crashed. There is a problem under investigation. STOP the run, and reload the Nord-50. This can be done by ABORT-N5Ø. (on ZDAS terminal) Note some details from the termination message e.g. MEMORY OUT OF RANGE. When the next run is started the Nord-50 should reload. please note down the number after this message

3) Previously a bug in YSPY caused it not to check all the Muon chamber map. This has hopefully been cured and should be observed.

00⁰⁰ 8th February 1982 Allison, Kawabata on shift.
00¹⁵ Phoned TASSO. They said PKR not willing to give time estimate. "Expert" working on linac.
00²⁵ Position gun damaged. No positrons before 15⁰⁰. PKR closing & going home.

I tried to write a Symbolic File (PUB)TRIGGER-STATUS, which can be read via QED. Please could other experts, (NAR) or LICEPP people check whether description agrees with status and with our intentions. Do not hesitate to update it (and note name and date) Kirkbid

3¹⁴ Magnet trip. Phoned K group. No answer. Phoned Control Tech (5555). They will try to help.
3⁴² K group have gone home. There will be someone in at 7⁰⁰. (I decided to wait until then).
7:00 Start Cosmic ray runs.
To look event display, I pressed F02 (NXT-EVNT-FASTV) then the following error
*13 ILLEGAL NHITS 788 360 364
came continuously on display. Stop the run, but error print continued.
We stoped N10/50 and loaded. Start ZDAS system. From begining the configuration was ZDAS1. Start run. However, run was terminated just after the read pedestal.
Tried several time, but situation was same.
Restart ZDAS again, and confirmed the configuration by the CONF ZDAS1:D2.
Then we could take data.

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	To rec $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 $E_{cl} > 6$ GeV	T_2 Bit 17 $2T \cdot E_4 \cdot 2Tr$

8.2.82

14^{30} people are still working for the position scan, it will not be ready before Febr. 9th 10^{00}.

16^{00} Takeda on shift.
Cosmic run is continuing without magnet current.

16^{21} Machine study started. Cosmic run was stopped.

20.00 Nozaki on shift

9.2.82.

0:00 Sato on shift
'machine studies'

04° Duerdoth on shift. — Machine studies.

08^{00} Heinzelmann & Rowe on shift

TRIGGER HARDWARE SIRIUS (PUB) TRI-STA
LAST UPDATE: KREHBIEL, 8/2/82
LAST UPDATE: NAROSKA, 9/2/82

SYMBOL: EC1[4] = LOWEST THRESHOLD OF ENDCAP 1
T-COL[3] = TOF COLLINEARITY OF WIDTH +- 3
T1 ACCEPT

BIT	COND.	BIT	COND.
1	LUMI	9	EC1[3] * EC2[3]
2	E[2]	10	(EC1+EC2)[3] * B[4]
3	TAGG * E[3]	11	TAGG * B[3]
4	FWMU OFF!	12	B[3]

OTHER BITS NOT USED AT THE MOMENT

T1 POSTPONE

BIT	COND.	T2-COND.	BIT	COND.	T2-COND.
1	2T * E[4]	)	9	1TBG * B[4]	1 TR-FST
2	TAGG * 2TBG	) 2TR ALL	10	NOT USED	
3	(EC1+EC2)[2]*2TNS	)	11	NOT USED	
4	2TBG OFF!		12	NOT USED	
5	NOT USED		13	T-COL[3] * (6T A)	TR-FST-COLL
6	NOT USED		14	T-COL[1] * (7T A)	
7	NOT USED		15	TBG COLL [1]	
8	FWMU	) 3 TR	16	NOT USED	

Questions to Naroska about Trigger Hardware
What exactly is the FWMU in bit 8 - T1 postpone?
~~Why~~ Are those 3 Tracks fast or all?
Why then no T1 coincidence with 3TOF, or 3TNS? What physics is this trigger for?
I ~~strongly~~ suggest the notation
(<6T) meaning less than 6T
instead of (6T A), H. Krehbiel
Why in T1-accept Bit 3 Tagg * E(3)
and Bit 11 Tagg * B(#3)? The latter should be included in the former!
Also there is a pure B[3] input.

Rejection NSD	MIP	TOF	<L> $\times 10^{30}$	$\int$ Ldt Run	$\int$ Ldt Exp	IBM TAPE	BP [V]	T2 Rej. Ev. Fr (%)	Brab.	MH	E_{beam}	Remarks

16:00 Wriedt & Kanzaki on shift
18.30 PUR asked to switch on our magnet (despite the fact that it is still energy-saving time - ~~what~~ that was overlooked by PUR).

19:00 JADE-magnet powered up
~20:00 New fill ready.
when starting the run, the fan of the upper TOF-crate broke down and had to be replaced.
~21:00 After having reached the TOF-crate every run crashed with "bad event structure". Peter Kuhlmann traced the error back to the forward μ-TDCs. After some unsuccessful attempts to solve the problem by exchanging TDC-units he found the problem to be caused by an unplugged ~~cable~~ TDC-start input cable (the one that goes into the delay-box).
For the right socket was not known to us, we chose one that at least gave a signal so we could start the run (at this stage we did no longer care about the correct timing of the forward μ-counters: we leave it for the expert).
During this operation the lower half of the visual scalers in the trigger-box stopped counting when being touched. It has not recovered till 22:30

Whoever changes the T1 hardware trigger bits should enter this in the NORD FILE (PUB) TRI-STAT. (Or ask someone to do it.)
Logon enter PUB, Load QED, Read TRI-STA. Make changes with help of the EDITOR features. Write back. Make a paper copy by
@COPY, TO DEVICE LI:PRI, FROM DEVICE TRI-STA.
Do not forget to change LINE 3 in the file (your name and the date!)

TRIGGER HARDWARE SIRIUS
LAST UPDATE: KREHBIEL, 9/2/82, MAINLY GRAPHICS POLISH
LAST UPDATE: NAROSKA, 9/2/82

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)

T1 ACCEPT

BIT	COND.	BIT	COND.
1	LUMI	9	EC1[3] * EC2[3]
2	E[2]	10	(EC1+EC2)[3] * B[4]
3	TAGG * E[3]	11	TAGG * B[3]
4	FWMU OFF!	12	B[3]

OTHER BITS NOT USED AT THE MOMENT

T1 POSTPONE

BIT	COND.	T2-COND.	BIT	COND.	T2-COND.
1	2T * E[4]	)	9	1TBG * B[4]	) 1TR-FST
2	TAGG * 2TBG	) 2TR-ALL	10	NOT USED	
3	(EC1+EC2)[2]*2TNS	)	11	NOT USED	
4	2TBG OFF!		12	NOT USED	
5	NOT USED		13	T-COL[3] * (6T	)
6	NOT USED		14	T-COL[1] * (7T	) TR-FST-COL
7	NOT USED		15	TBG-COL[2]	)
8	FWMU OFF!	) 3TR	16	NOT USED	

~22:00 Finally we could start a run: the trigger rate of 2TOF * (EC1 + EC2) was very high: we switched it off.
22:30 ID trip: diode current

23:00 All TOF counters fire all the time: Fennel COMMON STOP active and unplugged it. Now we get reasonable TOF distributions with the TOF-Miproc box!

Rate is still quite high: ~ 3Hz at 5.5 x 5.5 mA
Leave it for to-night, may lead to some deadtime after ~~now~~ filling.

B.N. phoned: all details now cleared.

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	To. rej $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 $E_{sum} > 6$ GeV	T_2 Bit 17 $2T \cdot E_{sum} \cdot 2Tr$

Rejection NSD, MIP, TOF	$\langle L \rangle$ $\times 10^{30}$	$\int$ Ldt Run	$\int$ Ldt Exp	IBM TAPE	BP [V]	T2 Rej. Ev. Tr (%)	Bhab.	MH	E_{beam}	Remarks

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0^{00} BETHKE & HEDGECOCK TAKE OVER IN THE DARK!

0:45 The LUMI - & TAG-triggers are still under study.

03.25 PKR ask us to run magnet down to 6000 A.

03.35 PKR ask us to run magnet to 500A

8^{00} As you SEE FROM THE SCREEN, IT SNOWED ALL NIGHT.

8:00 A. Ball + P. Warming on shift

09:05 3/4 of beam injected during energy scanning is lost during energy ramping. PKR start again
magnet current raised to 5500 A

15^{25} start first run today

15^{30} Something is wrong with the muons: there is no input to the T3 trigger (except dead channels)

16^{00} Glendenning + Steffen on shift.

16^{45} Run 10052 stopped, Magnet run down, Energy saving time.

20^{00} Random Trigger installed (T1-accept BIT 16). Rate ca 0,02 Hz.

19^{30} Start of Run 10 053

21^{15} End Run 10 055 Thresholds of LG to be changed.

21^{15} Error Messages from MIPROC (TOF) for Cords:

JDAS ERROR 61 (OCT) SUBERROR 3432 (OCT) TASK 1
424
570.

21^{30} In case of new filling and bad beam conditions, new LG trigger scheme gave some high trigger rates.
"But", this could be avoided if the µ-proc is on.
We decide to raise some thresholds until µ-proc. is repaired

27

From Run # 10056

E[4]	1 GeV	→ 1.5 GeV
EC[3]	360 MeV	→ 500 MeV

$$\left\{ \begin{array}{l} 2T * E[4] \times 2TR \\ EC1[3] * EC2[3] \\ B_4 * (EC1[3] + EC2[3]) \end{array} \right\}$$ Triggers affected by change of thresholds.

Takeda.

21^{30} Repeated error messages from TOF-Miproc
Miproc has been switch off

21^{58} After discussion with Cords: Miproc loaded + started again. Seems to work.

22^{18} Miproc-errors start again: We give him one further trial before switching it off definitely.

22^{40} start new filling: we hope for high current + luminosity.

0^{00} Tsibanidi, Wiedt

0:02 beams lost, 1D trip

0:00 We tried to put in the trigger $(EC_1+EC_2)_{LG} * 2\,TBG$ (bit 19). But the rate was still very high, so we take it out again.

1:55 Time-out error on Jet-chamber (JDAS ERROR 47 SUBERROR 703) occurs frequently. Just after the JDAS error 61 came out there were no triggers. Run restarted.

2:05 WORD-50 Hang up. stop run, about WORD 50:
Arithmetic Overflow
memory out of range

2:07 Several JDAS-Errors 061 (TOF-µ-proc)

2:36 Beams lost

3:10 New fill ready. There were no LG-related triggers for the first 1~2 min. of Run 10065 because of LG linear scan
crate power down.

Run	Date	Start	Stop	I+ (at Run start)	I− (at Run start)	DT (%)	Time (s)	Rec out	All ×10⁶	T0 rej ×10⁶	T1 Acc Sum	T2 Acc Sum	T1 Bit 2 E>6 GeV	T2 Bit 17 2T·E·2Tr	Rejection NSD	Rejection MIP	Rejection TOF	⟨L⟩ ×10³⁰	∫Ldt Run	∫Ldt Exp	IBM TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhab.	MH	E beam	Remarks
10057	10/2/82	21:33	21:58	5.7	6.0	4.9	1460	31876	379	18.6	361	3.6	1659	101				3.46	5.04	151.33	IBM		–	72	3	17.496	
10058	"	22:02	22:21	5.5	5.8	5.0	1120	2341	291	14.5	267	2.6	1206	89				3.18	3.56	154.89	"		–	42	2	"	
10059	"	22:22	22:40	5.3	5.6	4.8	1052	2184	273	13.2	260	2.3	1175	81				3.3	3.47	158.36	"		–	44	1	"	
10060	"	23:55	~~0:06~~	8.3	9.3	7.5	663	1897	172	12.9	159	2.1	1028	87				5.52	3.66	162.02	"	0.57	–	30	3	"	Beams lost
10061	11/2/82	0:48	1:36	8.0	8.2	9.3	2880	8002	749	20.0	679	8.7	4469	296				4.59	13.22	175.24	"	0.6	–	196	6	"	
10062	"	1:37	1:56	7.5	7.8	9.4	1099	2779	286	21.0	258	3.1	1465	113				4.77	5.25	180.49	"	0.5	–	54	3	"	
10063	"	1:58	2:06	7.4	7.6	7.7	455	1173	118	9.1	109	1.3	586	44				5.08	2.31	182.80	"	0.45	–	31	0	"	N-50 hang up
10064	"	2:11	2:39	6.8	7.0	6.4	1672	4180	435	27.6	407	4.6	2177	138				4.78	8.00	190.80	"	0.45	–	95	1	"	Beams lost
10065	"	3:15	3:22	9.0	9.0	5.7	421	1001	109	6.2	103	1.5	554	43				5.02	2.11	192.91	"	0.55	–	23	1	"	Beams lost
10066	"	4:29	5:10	7.7	7.7	6.7	2413	6001	628	41.9	526	6.6	3113	215				5.12	12.36	205.27	"	0.5	–	140	4	"	
10067	"	5:11	6:07	6.8	6.7	6.3	3374	8002	878	54.9	823	8.5	4110	292				4.67	15.76	221.03	"	0.45	–	207	8	"	
10068	"	6:08	6:11	6.7	6.7	5.3	142	357	37	1.9	35	0.3	154	15				4.59	0.65	221.68	"	0.4	–	9	0	"	N-50 hang up
10069																										" during the pedestal data taking
10070	"	6:17	6:44	6.2	6.2	5.4	1636	3608	426	23.1	402	3.7	1842	106				4.40	7.20	228.88	"	0.37	–	100	4	"	Beams dumped
10071 – 10074	ID Pulser Runs																				TAPE F11 146						
															T2, bit16	T2, bit17	T1, bit2	T1, bit1?)									
10075	"	10⁰⁶	10⁵⁹	7.8	7.8	6.2	3136	8002	816	51	765	9.1	4306	329	1835	748	1884	501	5.17	16.21	245.09	IBM	0.8	–	188	8	17.496	NF
10076	"	11⁰⁰	11³⁵	7.75	7.78	5.6	2061	5074	537	30.2	506	5.6	2805	172	1251	476	1177	310	4.90	10.09	255.18	"	0.58	–	127	6	17.495	Beams lost
10077	"	13:16	13⁵⁹	8.9	8.9	6.6	1308	3624	340	22.6	318	4.5	1935	129	778	372	846	239	5.85	7.65	262.83	"	0.63		72	5	– " –	NF RUN STOPPED AFTER NOR3-50 CRASHED? BEAMS LOST
10078	"	14⁷⁵			RUN		SUMMARY		CORRUPTED			DUE	TO		CRASH AND		SUBSEQUENT	CHECKS.				"	0.58	–	~~70~~		– " –	NOR3 – 50 HANG-UP ~~70~~ EVENTS ONLY.
10079	"	14³⁷	15⁰⁷	3.7	8.1	6.5	1754	4828	456	29.6	427	5.7	2624	147	1118	457	1142	277	5.1	8.95	271.78	"	0.56	–	108	4	– " –	BEAM LOST.
10080	"	15⁴⁶	16³³	8.2	8.0	6.6	2907	8002	756	50.2	706	9.6	4380	~~314~~ ~~323~~	1768	809	1795	0	5.3	15.49	287.27	"	0.64	–	180	8	– " –	
10081	"	16³⁶	16⁵⁰	7.8	7.6	6.4	834	2129	217	14.0	203	2.3	1123	69	441	194	495	0	4.8	4.02	291.29	"	0.50	–	51	1	– " –	Beam dumped

Run	Date	Start	Stop	I+	I−	Dead Time	Time (sec)	Records Out	All Triggers ×10⁶	T0 Reject ×10⁶	T1 Accept Sum	T2 Accept Sum	T3 Accept Sum	T1 bit 2 E>3 GeV	T2 bit 17 2TE·2TR	T1 LG>4	T1 Lum1	MIPROC 16	TOF MIPROC	⟨L⟩ ×10³⁰	∫Ldt Run	∫Ldt Exp	IBM TAPE	Beam Pipe (V)	Reject Event Fraction (%)	# Bha-Bha	# Multi Had	Beam Energy (GEV)	
																ON	OFF											
																N50	ON											
10082	"	20²⁸	20⁵⁷	8.5	8.5	23.5	3360	6008	459	108	1540	4319	29	131	48	ON	~~OFF~~	~~OFF~~	0.99	3.33	294.62	IBM	0.6	0	72	4	– " –	} MIPROC rejection was on for runs 10083 – 10086
10083	"	2059	~~20~~ 21¹⁴	8.1	8.2	6.9	924	2017	241	16.5	903	1269	38	40	72	ON	ON	ON	3.84	3.55	298.17	"	0.5	19	49	1	– " –	
10084-86	very short runs.																											
10087	"	21³⁴	21⁴²	7.6	7.6	8.4	48	1233	~~125~~	10.5	~~459~~ 298	691	50	285	112	ON	ON	ON	4.55	2.21	300.38	"	0.5	0	35	2	– " –	
10088	"	21⁴⁵	22³⁷	6.7	6.7	11.5	3105	8002	808	92.8	~~745~~	4701	256	1680	675	ON	ON	ON	4.41	13.68	314.05	"	0.5	0	156	6	– " –	
10089	"	22⁵²	23²⁵	6.0	6.2	6.9	2027	5032	527	36.2	1943	2838	~~153~~	1117	435	ON	ON	ON	4.30	8.71	322.77	"	0.4	0	133	2	– " –	
10090	12/2/82	0:06	0:18	7.9	8.2	7.7	754	1995	196	15.1	720	1154	73	401	179	ON	ON	ON	4.04	3.05	325.82	IBM	0.6	0	32	1	17.496	
10091	"	0:19	0:34	7.6	7.9	6.8	864	2472	225	15.3	877	1435	106	483	212	ON	OFF	OFF	3.94	3.41	329.23	"	0.55	0	42	1	"	
																							0.55					

541 85 < 139

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 reg $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 $E_{cl} > 6$ GeV	T_2 Bit 17 $2T \cdot E_{cl} \cdot 2tr$

30

11.2.82

3:22 Beams lost.
3:50 Short break is appeared on TV
4:28 New run starts with several error-messages on line-printer, concerning the μ-system & with
JDAS ERRORs 44, Laberer 302
+ " " 53, " 140204
4:30 We discovered that there is a hole in TRIGGER 1 INPUT Histogram (bit 125)! This hole starts from Run 10053.
5:03 Again ~~new~~ JDAS-Errors 61 & 63 ⇒ Stop Run, reload μ-proc; start new Run!
5:13 It happens again! Accompanied by many "IBM Online-job error check 2"
6:11 N-50 hang up:
arithmetic overflow, arithmetic underflow, memory out of range
Stop run, start new one
6:14 N-50 hang up again in the pedestal data-taking of Run 10069.

8:00 R. Hedgecock and H. Rieseberg on shift

R.D. Heuer makes ID pulser runs
08:50 Magnet to 7 GeV on request of PKR!
9:58 New filling ready
10:06 Run 10075 started
TOF MIPROC is off.
One problem solved: Hole in T_1 trigger. Beate N. discovered, that cable of second barrel septant was disconnected and plugged it back (before the start of R 10075)
11:00 Run 10076 started
11:35 Run ends by beam loss
12:45 Short break to repair a PETRA-HV power supply, which?
Neon tubes replaced in JADE control room
13:07 New filling ready
13:16 Run 10077 started
13:30 HOLD-50 BUSY COMES ON PAUSE/CONTINUE BRINGS SAME PROBLEM. APPEARS TO BE HANGING. STOP RUN.
13:43 BEAMS LOST - ID TRIPPED (WHILST I WAS NOTING HOLD-50 TERMINATION MESSAGES)
15:07 BEAM LOST ONCE AGAIN.

Rejection NSD	MIP	TOF	$\langle L \rangle \times 10^{30}$	$\int$ Ldt Run	$\int$ Ldt Exp	IBM TAPE	BP [V]	T2 Rej. Ev. Fr (%)	Bhab.	MH	E_{beam}	Remarks

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11.2.82

15:10 Spellman power supply for μ-crates 8+12 (+z,-z corner of filter) damaged by overheating due to cooling fan failure. Need to run down volts slowly before changing this supply.
Will take ~3 hours, during which time there will be no data from μ-crates 8+12, and consequent messages from YSPY that digitisers 86→93, and 130→141 are missing. AB.
15:46 New run started when beams were restored.

1600 Minowat Komamiya

~~1605~~ 1610 YSPY detected err., Muon Digitisers missing 63, 65, 67, 69, 71 } crate 6
1629 " " 36, " "

17:10 μ-crates 8 & 12 now working again. Digitisers in crate 6 replaced. Should now be no YSPY errors from μ-system. AB.

20:20 The MIPROC-16 is switched on for test purposes: it will flag (not reject) bad events.
If there are problems you can switch off the microprocessors with F19, F9, 1↓ or/and 2↓, 8↓ D.C.

21.10 We tried the 2-track trigger: $2TB_{NS} \cdot 2tr_{all}$ rate high → 50% deadtime
then → $2TB_{NS} \cdot 2tr_{all} \cdot (\geq 7\,TOF)$ rate high, at limit
⇒ so we tried: $3TB_{NS}$ $3tr_{all}$ $(\geq 7\,TOF)$, rate very low
we leave this trigger for the night. (bit 23)

21:10 MIPROC rejection turned on for runs 10083 to 10086

22:00
23 17 Tasso asks New fill in ten minutes.
23 28 Beams dumped.
~~12/2/82~~
0:00 Elsen & Odaka on shift
New fill
The last shifters found that histograms of TOF and forward-TOF are not normal, and this appeared after the last Energy-Saving-Time.
:19 We switched off MIPROC & ~~AC09~~ and started Run 10091 to check if the trouble is due to them.

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 rej $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bid 2 $E_\gamma > 6$ GeV	T_2 Bid 17 $2T \cdot E_\gamma \cdot 2\tau$	Rejection NSO	Rejection MIP	Rejection TOF	$\int Ldt$ Run	$\int Ldt$ Exp	IBM TAPE	BP [V]	T2 Rej. Ev. Fr (%)	Bhab.	MH	E_{beam}	Remarks

12.2.82

0:30 The trouble on TOF and forward-TOF were not resolved! (Beate does not answer the phone)

:35 MIPROC and AC2099 were switched on again, and Run 10092 started.

1:20 ~~NORD~~ TEKTRONIX is always busy, so we cannot check any histogram.
~~the trial~~ The message on Writer was "ERROR 14 IN 34557 AT 63133; OUTSIDE SEGMENT BOUNDS".
"PAGE NO.: 156"

We re-loaded NORD-10 and start run 10094. Since there is no color TV display ~~not~~ we stop run and start DAS again. color TV okay then. Start run 10095, and still get the problem that whenever the Tektronix display is used (NSO-Histogram, EVENT-DISPLAY), nothing happens with the first display request and after retyping the command the message "display busy - wait up to 2 secs" appears. (Abort-Display gives the answer "No display active".
Since according to DAS Folder the above message is related to YHDISP we change the appropriate mode file and remake the RT-program. A test run without rewritten data shows that nothing has changed.
Phone Cords, he will come.
We continue data taking bluntly. (Run 10096)

2:45 Beams dumped after announcement from TASSO.

3:30 Beams lost.

4 30 Beams back. We still have problems with the display. Do not take data.

On trigger rates: We do not understand why the accepted rate for T1-SUM is higher than the triggered one in run 10092 ?

5:11 Run 10098 started after system had been rebuilt. MIPROC-16 rejection on for this run!

5:15 Run 10099 started without rejections.

5:30 The message "timer crate 8 missing" which appeared occasionally at the beginning of the shift and either disappeared after a few seconds or after resetting, seem to stay longer now and have to be reset ~~a~~ twice sometimes.

5:45 DAS error 63 subr 160 TASK 1 followed by IBM ONLINE-JOB ERROR CHECK

6:21 The console prints continuously: "02202 37, IOX ERROR". We stop run and ~~start~~ run 10101

:44 Beams dumped for Energy Saving Time, run down magnet
The TOF problem still persists. We had reset the HV to old values, but nothing changed, using prog TOFHV
The multiplicity histogram still has only overflow entries.

10.00 Found Nord hung up on level 12, restarted.

8:00 Olsson, Onito

8:30 To cure the problem of TOF histogram put extra 4+8+16+32 ns delay in the TDC stop delay.

11:25 PKR says they have orbit problems, not understood.

13:30 Bennison pCrate 8 +4 off recalt 10 bins, 8 OK, then 4 OK, then 8 off permanently

13:36 IBM run, we start writing on tape.

13:46 IBM fail, run stopped for trigger play

13:57 (TBG)·(TOF) trigger study during Run 10104 and run 10105 and run 10106.

Current: 8.0 × 8.3 mA

		N-Nrot/Nelot	N/acc	N-Nrot/sec	dead time	
$N = (2TBG)_{NS} \cdot 2\,track$; NO MIPROC	50 MeV	5.7			3%	
	70 MeV	2.1	2.1		~10%	7.8 × 8.2
	100 MeV	1.2	1.4/sec	0.6/sec	~8%	7.6 × 8.0
						7.6 × 7.9
	80 MeV				7~8%	7.3 × 7.6
→ $(2TBG)_{NS} \cdot 2\,track$	80 MeV	1.6			9~17%	7.7 9.9
					9%	8.2 × 9.5 Bp. 0.1 Volt
					13%	9.1 × 9.3 Bp 0.8 Volt
$(2TBG)_{NS} \cdot 2\,track\,(\overline{TOF})$	80 MeV	0.1			8~10%	
$(2TBG)_{NS} \cdot 2\,track\,(\overline{TOF})$	50 MeV	0.65			15%	8.8 × 8.9 Bp. 0.8
					12%	8.8 × 8.9 Bp 0.8

15.30 Repaired some TOF-ADC channels. Wait for beam to find out which are still dead.

14:20 Nord hangs up on run 10104 memory out of range
last memory address 164450
break pt. R. 1 077140

Run	Date	Start	Stop	I_+ at Run start	I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	To reg. $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bid 2 $E_{\gamma} > 6$ GeV	T_2 Bid 17 $2T \cdot E_{\gamma} \cdot 2T_2$	Rejection NSD	Rejection MIP	Rejection TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T2 Rej. Ev. Fr (%)	Bhab.	MH	E_{beam}	Remarks
10092	12-2-82	0:35	1:15	7.0	7.3	8.2	2367	6751	6.16	50.4	2356	4022	250	1406	4105												
10093	"	1:21	1:36	6.8	7.0	7.0	547	1382	142	9.99	514	784	49	278	732												
10094	"	1:47	1:50	6.5	6.8	7.6	125	344	32.6	2.49	124	190	11	80	166												
10095	"	1:52	1:59	6.4	6.7	6.6	401	971	104	6.92	337	543	25	199	79												
10096	"	2:05	2:45	5.8	6.1	6.6	2387	5549	621	40.7	2163	3067	178	1242	401												
10097										lost	in	restart	of	system													
10098	"	5:11	5:15	7.7	8.0	10.7	220	485	57.3	6.1	214	353	19	123	327												
10099	"	5:17	6:09	6.8	7.1	8.0	3071	8002	799	63.8	2919	4639	280	1712	727												
10100	"	6:09	6:22	6.6	6.9	7.0	694	1737	181	12.6	682	951	62	410	128												
10101	"	6:33	6:41	6.4	6.6	6.7	442	1075	115	7.7	405	609	27	255	564												
10102	"	13:29	13:36	8.9	8.5	7.6	382	1140	99	7.5	406	632	33	224	631												
10103	"																										
10104		Trigger study not for physics																									
10105																											
10106																											
10107																											
10108	"	16 41	1653	8.4	8.4	13.2	691	2542	180	23.8	733	1660	94	465	181	ON	ON	ON	5.16	3.56	375.04	IBM	0.8	0	42	0	17.495	Beam dumped for energy-saving.
10109	"	19:24	19:27	9.9	9.7	15.1	~190 ~~155~~	669	40 ~~42~~	6.1	19.9	417	25	101	68	ON	OFF	0.45(?)	0.70	375.74	IBM	0.75	0	9	0	17.496	"Time" was wrong, TOF MIPROCS off.
10110	"	19:27	19:47	9.1	9.0	10.9	3042	4366	291	31.7	1223	2923	140	689	331	ON	ON	1.64	4.98	380.72	IBM	0.75	0	60	5	"	
10111	"	19:47	20:41	7.9	7.9	23.2	1425	8002	501	116	2189	5472	193	1221	454	ON	ON	3.46	6.66	387.38	"	0.6	0	112	1	17.496	~~TAGG~~ PAUSED during Background ~~Optimization~~
10112	"	20:42	20:45	7.8	7.8	11.1	156	694	40	4.5	149	420	13	110	62	"	"	4.76	0.74	388.12	"	0.6	0	10	0	"	Beam Lost.
10113	"	21:37	22:03	8.8	8.8	16.4	1504	6523	391	64.1	1822	4366	176	981	561	ON	ON	4.01	6.03	394.15	"	0.66	0	67	2	17.495	
10114	"	22:06	22:41	8.0	8.1	12.5	2094	8002	545	68.2	2373	5268	221	1203	640	ON	ON	4.19	8.77	402.92	"	0.6	0	101	1	"	
10115	"	22:41	23:19	7.4	7.5	10.3	2256	8002	587	60.5	2536	5127	205	1293	540	ON	ON	3.87	8.73	411.65	"	0.55	0	81	3	"	
10116	"	23:20	0:01	6.8	6.9	8.7	2461	8002	641	55.5	2525	5132	201	1287	568	ON	ON	3.73	9.17	420.82	"	0.5	0	92	1	17.496	
10117	13/2/82	0:01	0:44	6.2	6.3	8.2	2563	8002	667	54.8	2606	5060	201	1389	495	ON	ON	3.62	9.27	430.09	"	0.5	0	123	3	"	
10118	"	0:45	1:34	5.7	5.8	8.0	2798	8002	728	58.1	2715	4944	207	1385	460	ON	ON	3.33	9.32	439.41	"	0.45	0	85	5	"	
10119	"	1:35	2:00	5.4	5.5	6.6	1492	4073	389	25.6	1417	2488	92	741	220	ON	ON	3.31	4.94	444.35	"	0.40	0	62	3	"	beams dumped
10120	"	2.30	3.03	8.4	8.7	12.6	1937	8002	504	63.3	2520	5125	211	1290	617	ON	ON	5.30	10.27	454.62	"	0.70	0	123	5	"	
10121	"	3.03	3.39	7.7	8.0	10.5	2108	8002	549	57.7	2524	5128	204	1246	584	ON	ON	4.94	1041	455.03	"	0.60	0	123	2	"	
10122	"	3.39	4.17	7.0	7.3	9.6	2244	8002	584	56.2	2632	5043	183	1380	523	ON	ON	4.64	10.42	465.45	"	0.55	0	128	3	"	
10123	"	4.17	4.45	7.0	7.3	8.6	1595	5432	415	355	1781	3392	128	956	363	ON	ON	4.51	7.19	472.64	"	0.50	0	100	3	"	beams lost
10124	"	5.55	6.26	8.9	8.6	18.0	1841	8002	479	86.1	2270	5400	180	1162	650	ON	ON	5.30	9.76	482.40	"	0.95	0	115	4	"	
10125	"	6.27	6.44	8.4	8.2	13.0	1006	4219	262	34.1	1335	2712	96	699	297	ON	ON	5.45	5.48	487.88	"	0.65	0	80	3	"	

Trigger changed to $(2TBG)_{NS}$ · 2track with TBG Threshold 80 MeV

$(2TBG)_{NS}$ = 2track with threshold 80 MeV

Trigger study not for physics

154467

17.9 + 63 = 252

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	To reg. $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 $E_\gamma > 6$ GeV	T_2 Bit 17 $2T \cdot E_\gamma \cdot 2\tau$

Rejection NSO	MIP	TOF	$\int Ldt$ $\times 10^{30}$	$\int Ldt$ Run	$\int Ldt$ Exp	IBM TAPE	BP [V]	T2 Rej. Ev. Fr (%)	Bhab.	MH	E_{beam}	Remarks

12/2/82

16^{40} We decide to run (from run 10108) with $(2TBG)_{NS}$ · 2track with TBG threshold of 80 MeV

16:00 Murphy a Sato on shift

19:21 PETRA on after energy-tuning.

19:24 Start run 10109

Microprocessors were not on. Stop & restart.

19:27 Start run 10110.

19:45 Stop run 10110 : explanation: LUMI (& TAGG-) triggers should work correctly from now on. The luminosity-values so far had not been affected. Says H. Wriedt. The LUMI-events before run 10111 (from this run-period) should not be used, they are mainly junk.

```
        TRIGGER HARDWARE STATUS
        ***********************
        LAST UPDATE: KREHBIEL,12/2/82

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 )

    T1 ACCEPT
BIT   COND.          I    BIT   COND.
-----------------------------------------------------------
 1    LUMI           I     9    EC1[3] * EC2[3]
 2    EC[2]          I    10    ( EC1+EC2 )E[3] * BE[4]
 3    TAGG * EE[3]   I    11    TAGG * BE[3]
 4    FUMU OFF!      I    12    BE[3]
                     I    16    RANDOM CA 0.01 HZ
-----------------------------------------------------------
OTHER BITS NOT USED AT THE MOMENT

    T1 POSTPONE
BIT   COND.                T2-COND. I  BIT   COND.          T2-COND.
-----------------------------------------------------------------------
17   2T * EE[4]            )        I  25   1TBG * BE[4]    ) 1TR-FST
18   TAGG * 2TBG           ) 2TR-ALL I  26   NOT USED
19   (EC1+EC2)[2]*2T  OFF!          I  27   NOT USED
20   2TBG-NS                        I  28   NOT USED
21   NOT USED                       I  29   T-COL[3] * <5T  )
22   NOT USED                       I  30   T-COL[1] * <7T  ) TR-FST-COL
23   NOT USED                       I  31   TBG-COL[2]      )
24   FUMUE[6] * (3TR-ID + 1MU-FWD)  I  32   NOT USED
-----------------------------------------------------------------------
  BG-THRESHOLD NOW 80 MEV NOMINAL
```

During run 10111 (~ 2000 hrs) background became bad. Paused a switched off ID while PKR optimized. BP up to 1:0.

2023: BP now 0.65. Continue run 10111

Intermittent error code 8 missing. Austin B. knows about it. Happens ~1/6 h

2205: "No events" "Bad event structure" on TV.

Stop run 10113.

Start run 10114. Goes OK.

JDAS error 44 — 703 occurs quite often.

13/2/82

0:00 Takeda, Meier

1:19 IBM - Problems, but after some time linking worked successfully

1:20 'μ-crate 8 missing' appears quite frequently now

1:45 RUN 10119. LG read-out threshold → 3 for a check of total energy threshold behaviour. After this run, LG read-out threshold was set to 6 again.

2:51 YSPY detects error - Muon digitizer 41 missing

6:30 JADE-Disk 95% full, phoned IBM to start Dump-Job

6:31 some JDAS errors 61 (AC2099 TOF1 wrong length) occurred

6:45 after several JDAS errors 61 we stopped the run and reloaded the microprocessors as described in the JDAS folder

6:55 line printer prints message 'IOX-Error', no events
we reloaded JDAS → o.k.

7:00 Reset of μ-crate 12 was only possible down in the hall

8:00 Yamada, Kanzaki

8:23 'NO EVENTS' appears suddenly, but it seems there is nothing wrong in the Hardware Room and also no other ERROR message comes.
Stop Run 10129 and start Run 10130. It works!

8:28 But 'NO EVENTS ...' comes again.
We reloaded N10 but couldn't start data taking. Noticed NSO was not working.
We phoned Herr Dittmann. He suggested us to restart NSO by issuing CONF command.
It works!

8:40 'IBM ON LINE-JOB ERROR CHECK 2' appears 3 times.

9:03 'Bad EVENT STRUCTURE — FAULTT PART 8' comes on TV then
'IBM ON LINE-JOB ERROR CHECH 2' appears more 3 times

9:04 'JDAS ERROR 61 - 1053'

9:35 JDAS ERROR 44 - 703

9:40 Beams dumped

11:30 Beams refilled.
Right after starting (after new fill) $R_{trig} \sim 4.4$, dead time ~10%

12:59 JDAS ERROR 57 suberror 2 Task 1
" " 45 1 → then no trigger at al.
also IOX error many times. Run 10136 stopped, then IOX error again.

Run	Date	Start	Stop	I+ at Run start	I− at Run start	DT (%)	Time (s)	Rec out	All ×10⁶	T0 rej ×10⁶	T1 Acc Sum	T2 Acc Sum	T1 Bit2 E>6GeV	T2 Bit17 2T·E·2T	ON/OFF MS	MP16	TOF-MP	<L> ×10³⁰	∫L dt Run	∫L dt Exp	IBM TAPE	BP [V]	T2 Reject Event Fr. [%]	# Bhabha	# MH	Beam-Energy [GeV]	TDC BS	Remarks
10126	13/2/82	6:45	6:54	8.2	7.9	10.7	530	2139	138	14.8	720	1319	44	374	146	ON	ON	5.77	3.06	490.94	IBM	0.55	0	41	2	17.496		
10127	"	6:59	7:34	7.4	7.2	10.0	2109	8002	549	55.2	2656	5000	200	1380	585	"	"	5.28	11.13	502.07	"	0.50	0	159	7	"		
10128	"	7:35	8:14	6.8	6.6	8.8	2322	8002	605	53.4	2724	4959	181	1370	531	"	"	4.97	11.55	513.62	"	0.47	Ø	120	4	17.496		
10129	"	8:14	8:23	6.7	6.5	37.9	509	1164	133	50.3	390	720	22	195	81	"	"	3.45	1.76	515.38	"		Ø	23	1	"		
10130	"	8:25	8:28	6.6	6.4	8.0	132	466	34	2.8	156	276	5	79	29	"	"	4.64	0.61	515.99	"		Ø	8	Ø	"		
10131																												abandoned due to NSD trouble
10132	"	8:44	9:29	5.8	5.6	7.5	2669	8004	695	52.0	2763	4938	154	1377	479	"	"	4.33	11.55	527.54	"	0.43	Ø	127	4	"		Beams dumped
10133	"	9:29	9:40	5.7	5.5	7.8	620	1744	161	12.6	628	1051	26	347	698	"	"	4.26	2.64	530.18	"	0.40	Ø	30	1	"		
10134	"	11:34	12:08	8.2	8.7	10.5	2076	8002	540	56.9	2470	5486	204	1233	573	"	"	4.94	10.25	540.43	"	0.75	Ø	120	1	"		
10135	"	12:09	12:46	7.4	7.9	9.5	2205	8002	574	54.4	2656	4983	222	1320	519	"	"	5.49	12.11	552.54	"	0.58	Ø	129	9	"		
10136	"	12:46	12:58	7.1	7.6	8.7	709	2477	184	16.0	842	1479	62	435	154	"	"	5.09	3.61	556.15	"	0.54	Ø	46	1	"		
10137	"	13:04	13:25	~7	~7	8.5	1272	4118	331	28.3	1408	2517	98	680	244	"	"	5.01	6.37	562.52	"	—	Ø	68	1			Beams lost !
10138	"	15:23	15:36	9.96	9.76	R.2	770	3082	200	24.4	878	2042	87	445	255	"	"	4.04	3.11	565.63	"	0.8	Ø	53	1	1 "		
10139	"	15:39	16:41	8.86	9.25	9.6	3703	8002	965	92.7	4159	8409	370	2236	900	"	"	4.03	14.96	580.59	"	0.63	60	227	4	17.496		REJECT-EVENT OF MIPROC STARTED
10140	"	16:43	17:49	6.3	6.9	8.2	3705	8002	1016	82.0	4342	7808	339	2243	827	"	"	4.19	16.36	596.95	"	.53	5960	2110	8	17.496		
10141	"	17:49	18:03	6.2	6.7	7.7	781	1831	203	15.6	803	1507	68	398	155	"	"	3.88	3.03	599.98	"	.45	59	72	Ø	"		stopped to reload changed JJAS by D.C.
10142	"	18:04	18:43	5.7	6.2	7.4	2241	4297	583	43.1	2264	4183	129	1214	402	"	"	3.62	8.10	608.08	"	.42	58	89	6	"		
10143	"	18:46	18.58	5.66	6.14	6.7	718	1255	186	12.5	724	1177	43	393	95	"	"	3.54	2.54	610.62	"	.36	61	34	3	"		Beams dumped
10144	"	19:29	20:15	8.6	8.2	10.5	2604	5820	677	71.1	2843	6643	238	1556	764	"	"	3.55	9.25	619.87	"	.75	61	117	5	"		← also satellite bunches filled
10145	"	20.59	21.58	9.59	9.53	9.9%	3504	8002	972	90	4213	8373	357	2271	925	"	"	4.98	17.45	637.32	"	0.72	61	217	4	17.496		
10146	"	21.58	23.02	7.0 at end	7.0	8.7%	3807	8002	991	85,9	4368	7815	299	2287	757	"	"	4.59	17.48	654.80	"	.55	59	206	6	"		
10147	"	23.02	23.55	6.96	6.94		3129		814	74.6	3793	5733	207	1641	?	"	"					.47						ENBS w. NORD HANGUP. Figures from Trigger Box
		23:59	00:08	6.1	6.1	6.7	553	1003	144	9.7	532	930	42	285	82	"	"	4.00	2.21	657.01	"	0.45	57	18	0	17.496		
10148	14/2/82	00:09	00:39	5.7	5.7	6.4	1824	3157	474	30.5	1717	3044	101	880	277	"	"	4.02	7.33	664.34	"	0.4	58	70	3	"		timing after load cut structure
10149	"	00.43	01:00	5.5	5.5	6.3	989	1720	258	16.3	931	1594	62	483	143	"	"	3.42	3.39	667.73	"	0.35	57	45	4	"		beams dumped
10150	"	2:07	3:05	8.1	7.9	10.7	3287	8002	855	91.5	4142	8453	345	2135	979	"	"	5.60	18.40	686.13	"	0.8	60%	211	9	"		
10151	"	3.05	3:06	7.0	6.8	8.3	3645	8002	948	87.9	4319	7926	317	2203	856	"	"	4.96	18.09	704.22	"	0.58	59	223	13	"		
10152	"	4.09	5:48	6.0	5.8	7.9	4097	8002	1066	84.3	4431	7689	285	2213	767	"	"	4.29	17.56	721.78	"	0.48	59	200	9	"		
10153	"	5.19	6:02	5.5	5.3	6.9	2604	4620	678	46.8	2548	4475	152	1339	410	"	"	3.69	9.61	731.39	"	0.41	58	101	2	"		
10154	"	6:46	7.10	8.7	8.8	10.4	1389	3336	361	37.6	1734	3376	135	855	376	"	"	5.58	7.77	738.16	"	0.72	58	96	0	"		
10155	"	7.13																				0.61						Nord Hangup Summary lost !
10156	"	7.52	9.02	6.7	6.3	8.4	3956	8002	1030	86.1	4234	7930	341	2204	827	"	"	4.27	16.90	756.06	"	0.54	59	195	7	"		
10157	"	9.02	10.15	5.8	5.8	8.10	4318	8002	1124	90.2	4353	7771	289	2326	699	"	"	3.82	16.50	772.56	"		59	184	6	"		
10158	"	10.15	11.08	5.3	5.3	6.5	2682	4733	698	45.7	2587	4375	194	1378	393	"	"	3.36	9.02	781.58	"		58	99	1	"		Beams dumped
																								201 +	122	= 323		

Run	Date	Start	Stop	I+ at Run start	I− at Run start	DT (%)	Time (s)	Rec out	All ×10⁶	To rej ×10⁶	T1 ACC Sum	T2 ACC Sum	T1 Bit 2 E_T > 6 GeV	T2 Bit 17 2T·E_T·2π	Rejection NSO	Rejection MIP	Rejection TDF	⟨L⟩ ×10³⁰	∫Ldt Run	∫Ldt Exp	IBM TAPE	BP [V]	T2 Rej. Ev Fr (%)	Bhab.	MH	E_beam	Remarks

13/2/82

13[00] After RUN 10136 connectors of CAMAC crates were examined just by touching. When the U port adaptor cable (slot #22) was touched. IOX lamp of the CAMAC-NORD interface flickered once.
RUN 10137 looks OK.

13[22] JDAS error 44. suberror 703. TASK 1 → But the crate looks OK.

13[26] Beams lost.

15[21] New filling is ready.

15[22] JDAS ERROR 44 - 703 TASK 1. → The crate looks OK.

15[38] NO trigger! - The reason is unknown.
RUN 10138 terminated.
The next run (10139) goes normally.

15[55] JDAS ERROR 61 - 762. TASK 1.

15[30] Event-Rejection of MIPROC-16 is now o.k. and turned on (starting with run 10139)
If instantaneous rejection rate suddenly jumps to 100%, look at N10, NSO, IBM counts; if they continue to increment, everything is o.k.
You can look at "reject-candidates" (5% are left through) by setting the MIPROC-MASK = 300000 under the select-event-options. D.G.

16:00 Krekbiel + Heer

18:04 } several JDAS error 61 and IBM online check 2 { seems to be correlated with
18:35 } { bad event structure

18:45 Reload AC 2099

19:28 First Run after Refill: immediately bad ev. structure, Error 61 and on line error check 2

19.35 IBM-ON-L. ERR CK 2 JDAS ERR 44, Sub. 703

19.49 ID Trip. Beams not lost.

19:10 Tasso flowers: PWR scan: they have also filled satellite buckets (RUN 10144)
our z-Vertex distribution (all) doesn't show a bj effect

20:15 Beams dumped

23.25 JDAS ERRORS 61/3427/1 63/2330/1 61/3427/1 ONLINE-JOB ERROR 2

23.55. NORD 10 Hangup during regular Event display (No human interference). Heuer restarts NORD 10

14/2/82 0.10 Stop Run because IBM counter on the coulored TV stands on 5861 and doesn't move any longer.

14/2/82

Ball, Matsumura on shift:

Run number 10147 may have been duplicated because of NORD hang-up. There was no run summary for the run (10147) stopped at 23:55 (by NORD crash). The run which was stopped at 00:08 also bears the number 10147. Possibly no events were actually written to IBM after 23:55, or maybe they were written as a continuation of the original run 10147, or maybe there are 2 runs 10147. The second set of numbers entered in the run tables applies to data taken between 23:59 and 0:08

00:28 TASSO request new fill at 01:00. OK by us.

00:40 'Bad event structure' warning, accompanied by 'IBM online job error check 2', after which NO events, with trigger box white light on. Stop run 10148. Start run 10149 with no problems.

01:00 Beams dumped.

02:07 New fill. Start run 10150.

02:40 ID trip. reset OK.

2.56 JDAS Error 000061 Suberror 000072 Task 1

3.08 ID trip. reset OK

03:34 2 x bad event structure + online job error check 2.

5.00 IBM ONLINE JOB Error Check 2

~~6.48~~ Beam dumped

7.13 No Trigger RUN Stopped

7.35 JDAS Error 000061 Sub error 000137
000336
000547

7.43 Nord Hangup restart

8.00 Murphy & Haidt on shift

9.02	JDAS Error	61 (OCT)	suberror 7350 (OCT)	TASK 1 (ONLINE Job error 2)
		61	7336	
11.00		61	764	
4		61	501	
11		61	1474	
13.24		61	7765	
		62	525	
		61	3431	
14.26		61	3403	
		61		

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	To rej $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 $E_{\perp} > 6$ GeV	T_2 Bit 17 $2T \cdot E_{\perp} \cdot 2T_{\theta}$	Rejection NSD	Rejection MIP	Rejection TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T2 Rej. Ev Fr (%)	Bhab.	MH	E_{beam}	Remarks
42																											43
RUN	Date	Start	Stop	I_+	I_-	Dead Time %	Time s	Records Out	All Triggers $\times 10^6$	To Reject $\times 10^6$	T_1 Accept Sum	T_2 Accept Sum	T_3 Accept Sum	T_1 Bit 2 $E_{\perp} > 3$ GeV	T_2 Bit 17 $2T \otimes E_{\perp} \otimes 2T_{\theta}$	NSD ON	MIP ON	TOF ON	$\times 10^{30}$	(run)								TDC 85	
10159	14-2-82	11 37	12 34	7.9	7.7	10.2	3417	8002	887	90.5	4159	8351	359	2168	888	ON	ON	ON	4.80	16.40	781.58 797.98	IBM	0.6	60	208	8	17.496		last used on p13. Now historical?
10160	"	12 34	13 25	7.1	6.8	9.1	3001	6409	781	71.1	3406	6488	284	1816	646	"	"	"	4.45	13.35	811.33	"	0.5	60	164	1	"		
10161	"	13.25	14.11	6.4	6.2	8.3	2694	5462	701	57.9	2865	5466	248	1497	507	"	"	"	3.99	10.75	822.08	"	0.5		134	9	"		Next trigger should stop at end of run; no run summary.
10162	"	14.11	~1525					~7900								"	"	"											Beams dumped.
10163	"	15 29	15 46	5.3	5.1	7.0	963	1736	252	17.7	882	1841	43	472	185	"	"	"	2.94	2.85	824.93	"		58	27	1	"		
10164	"	21 16	22 15	8.6	8.1	10.2	3337	8002	867	88.3	4247	8156	360	2183	958	"	"	"	5.48	18.30	843.23	"	0.7	60	200	11	17.500		
10165	"	22 15	23 15	7.6	7.0	9.0	3586	8002	932	83.8	4352	7838	358	2185	815	"	"	"	5.38	19.30	862.53	"	0.55	~~60~~	~~200~~ 247	~~11~~ 5	"		
10166	"	23 15	23 28	7.4	6.9	8.9	336	958	103	92	432	900	36	247	101	"	"	"	5.04	2.00	864.53	"	0.5	55	24	2	"		N50 hang-up immediate N50 hang-up, no run-summary
10167	"	23 26	23 26								only junk					"	"	"				only junk							
10168	"	23 28	0 34	6.4	5.9	7.9	3913	8007	1017	80.2	4399	7621	349	2254	768	"	"	"	4.88	19.08	883.61	IBM	0.5	59	227	5	17.500		beams dumped
10169	15/2/82	0 34	1 01	6.1	5.6	7.4	1587	2974	413	30.6	1611	3005	122	826	281	"	"	"	4.30	6.83	890.44	"	0.5	~~57~~ 61	73	4	"		
10170	"	0 ~~46~~	2:05	9.3	9.2	9.1	1072	2226	279	25.4	1070	2415	139	557	224	"	"	"	5.39	5.78	896.22	"	0.75	60	58	3	"		
10171	"	02 05	03 02	8.0	8.0	9.7	3382	7540	879	85.2	3917	7844	391	1986	830	"	"	"	5.35	18.08	914.30	"	0.66	61	206	2	"		
10172	"	03 04	04 00	7.0	7.0	9.7	3367	8002	876	84.9	4268	7800	404	2250	841	"	"	"	5.24	17.63	931.93	"	0.60	~~55~~ 59	215	11	"		
10173										very short run																			
10174	"	04 04	04 45	6.4	6.3	8.5	2503	5406	651	55.2	2926	5201	263	1571	518	"	"	"	4.76	11.91	943.84	"	0.55	59	142	3	"		Beams dumped.
10175	"	05 33	~~2025~~ 6.08	8.7	9.0	10.7	~~2025~~	5159	527	56.3	~~2702~~	5161	265	1379	557	"	"	"	5.92	11.99	955.83	"	0.75	59	139	3	"		Beams lost
10176	"	10.01	11:02	8.3	7.3	11.1	3349	8002	872	96.9	4058	8850	332	2116	1178	"	"	"	3.86	12.91	968.74	"	0.75	61	124	2	"		
10177	"	11:07	11:48	7.6	6.6	8.7	2680	5805	698	60.8	2995	5763	212	1514	620	"	"	"	4.24	11.37	980.11	"	.52	60	128	4	"		Beams lost
10178	"	14:40	15:37	10.10	9.16	9.8	3410	8002	887	87.0	4013	7947	355	2210	930	"	"	"	5.31	18.11	998.22	"	.68	60	205	6	17.300	17.500	change in E
10179	"	15.37	15:56	8.5	7.7	9.2	1080	2510	281	26.0	1309	2468	112	678	277	"	"	"	4.69	5.06	1003.28	"	.57	58	54	2	17.500		add E again beam lost
10180	Test run to IBM																												
10181	16/2/82	19 23	20 14	9.0	8.8	11.4	3030	8002	788	80	~~7383~~	8080	330	2185	957	"	"	"	6.8	20.64	1023.92	"	.6	61	250	11	17.300		
10182	"	20 14	21 05	~~7.9~~ 8.1	7.7	12.4	3002	8002	781	97	4402	~~7969~~	295	2152	938	"	"	"	6.7	20.25	1049.17	"	.5	60	232	7	"		
10183	"	21 55	22 06	7.0	6.8	9.1	3642	8002	948	86	4323	8188	341	2207	943	"	"	"	5.1	18.43	1062.60	"		61	220	5	"		beams lost
10184	"	22 10	22 30	6.4	6.2	9.7	2357	5239	614	60	2874	5394	187	1407	637	"	"	"	5.0	11.81	1024.41	"		61	146	4	"		
10185	"	23 47	0 12													"	"	"				"	.8				"		Run Summary lost
10186	16/2/82	0 45	0.28	9.6	10.1	13.0	732	2360	191	24.7	1283	2179	98	691	297	"	"	"	8.15	5.97	1080.38	"	0.66	58	82	3	"		
10187	"	0:29	1:16	0.6	0.5	12.1	2699	7613	702	85.3	4113	7501	342	2081	943	"	"	"	7.21	19.46	1099.84	"	0.65	60	234	4	"		beams lost
10188	"	2:09	2:58	8.8	8.9	11.7	2925	8002	761	88.8	4446	7915	321	2215	927	"	"	"	7.49	21.92	1121.76	"	0.74	60	246	8	"		
10189	"	2:59	3:53	7.7	7.8	10.0	3242	8002	844	84.5	4480	7862	340	2289	861	"	"	"	6.54	21.20	1142.96	"	0.56	60	244	6	"		
10190	"	3:54	~~4:16~~	0.4	0.2	8.8	1342	3152	349	30.7	1741	2875	137	899	287	"	"	"	5.83	7.83	1150.79	"	0.48	58	94	4	"		beams lost
10191	"	5:15	5:31	8.7	9.6	10.7	950	2244	247	26.3	1152	2418	100	623	260	"	"	"	4.96	4.71	1155.50	"	0.7	~~66~~ 61	66	1	"		terminated because of "Bad Event Structure"
10192	"	5:34	6:23	7.7	8.6	11.6	2875	8002	775	89.8	4259	~~8163~~ 8160	380	2189	866	"	"	"	6.01	18.87	1174.37	"	0.67	61	200	8	"		

5247 − 143 = 4104

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	To. rec $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 $E_g > 6$ GeV	T_2 Bit 17 $2T \cdot E_4 \cdot 2\tau_r$

Rejection NSO	MIP	TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T2 Rej. Ev Fr (%)	Bhab.	MH	E_{beam}	Remarks

15.2.82

3.00 LG power supply (for linear sum crate 3+4+5) went down during RUN 10171.
[all LG-triggers were not okey
[ADC data of End Caps and ½ Barrel not okey.

6.50 Energy-saving-time. Run down the magnet to 500 A.

8.00 Haase, Wriedt

8.45 Updated some standard histograms in folder "what to know about JDAS"

9.00 Exchanged 1D18 (wire 1480–1487). It gave too many hits

10.00 New file ready
BP-counter #22 taken out of background-sum (very noisy); #16 remains out as well.

10:16 Run paused, JET-ch. switched off because of background maximalization

10:20 " continued

11:30 Lumi suddenly jumps from ~3.something to 4,8!
Call to PKR explains: One Pluto septum magnet was off and just now turned on.
This changed obviously drastically the Lumi, but not the background at all.

11:48 Beam lost without chamber alarm

12:55 Problem with PLUTO-Magnet: we run down our magnet to 500 A

13:15 Injection continues, raise magnet to 7500 A.

14:15 PKR intends to run DETER at slightly lower energy in order to store higher currents & to improve luminosity.

14:40 BP-ch #22 plugged in again

14:40 New energy seems to be 17.300

IF there is a power-supply failure in the LG-Trigger system, please note which red LED it was on (e.g. Spannungsausfall, Lifter-Ausfall).

15.30 PKR changed accidentally E_g to 17.500. They wanted to try another file (which had 17.5 GeV as endenergy). ⇒ Run 10178
Rest of the filling: 17.5 GeV

15.40 Next filling: 17.300 GeV again

15:43 μ-crate #6 missing; reset successfully

15.45 Run-Summary Run 10171: 1★ No trigger hit

15:56 Beams lost (without 1D-trip)

44 14/2/82

1525 NORD hang up;

16.00 Kobayashi, Wriedt

17.05 "short break" for about one hour now: there are problems with one of the LINACs. PKR does not know how long it will take them to repair it so we run down the magnet to 500 A. (Probably this will shorten the repair-time.) [Obviously not]

17.15 "LINAC I out of order, restart 18.30" appears on TV-screen.

18.17 "18.30" ⟶ "19.30"

19.30 "19.30" ⟶ "20.30"

20.22 "Injection": we raise the magnet-current to 7500 A

21.16 New file ready, start run 10164

21.20 1D-trip

21.48 JDAS-Error 61 Suberror 742 & IBM-online-job Error check 2
" " 61 " 3427 & —"—
22.20 " " 61 " 764 " —"—
22.28 " " 61 " 507 & —"—

22.40 YSPY-error: μ-digitizer #41 missing (μ-chamber 150 seems to be firing i.o.k., we will observe it). 23:40: the YSPY-message was probably due to a statistical fluctuation, μ-chamber 150 looks ok.

23.23 Stop run 10166 because of N50 hang up:
- memory out of range at: 112000
- " " " range Δ ACQUISITION
last start address 155511

23.26 Data run 10167: N50 hang-up immediately after run-start:
- memory out of range at 112000
Try again! now (i.e. run 10168) it seems to have worked, but: the N50-scaler on the colour-TV started with 5 counts, i.e. was not initialized to 0.

15TH. FEBRUARY

00.00 McCann & Minowa on shift

0.39 The N50 scaler on the colour TV seems ok. (Run 10169)

1.05 New file ready.

1.45 found that LG-linear sum for EQ8 (ch17–24) was not working.
This means this part of the endcap was not summed to E_{tot}, EC_1, EC_2 and EQ8.
1 hybrid IC replaced (AV7). Ok from Run 10170 on.

2.35 JDAS error 61 | 3376 !!
61 | 1327
please watch Trigger 1 input histogram.
(See the folder „what to know about JDAS".)

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	To rej $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 $E_{cl} > 6$ GeV	T_2 Bit 17 $2T \cdot E_{cl} \cdot 2tr$

15/2/82

16²⁰ Up to run 10179 there was errors in reading CAMAC; the muon and jet chamber current banks may have been affected. D.C.

16⁴⁵ Magnet down to 500 A. 19⁰⁰ Magnet up

19²⁰ Start running at 17.3 GeV 10 × 10 mA $\langle \mathcal{L} \rangle \sim 7 \cdot 10^{30}$ event rate 2.5/sec

The DEAD TIME is not any more determined by the N50, but by CAMAC:
average CAMAC read time / trigger 25 msec × 5 trigger/sec = 0.125 msec
= 12.5% DEAD TIME

22⁵⁰ beams lost

Find 4 dead LG blocks in LG endcap hitmap. Tokyo-group is informed.
⇒ (this histogram accidentally disappeared from the standard histograms, so please check it from time to time)

16.2.82

0:00 Matsumura & Odaka on shift

0:12 Nord Hang
Restart Run Summary ~~[illegible]~~ 10185 lost

0:28 Nord Problem Run Stopped

0:42 ID-trip

.52 JDAS error 61-700

1:17 Jet-Chamber high current → Beams lost.

3:39 JDAS error 61-3040 & 61-537

4:17 Jet-Chamber high current → Beams lost.

5:14 New Fill

5:31 "Bad Event Structure" on color TV, and "No Trigger".
We terminated Run 10191, and then started the next run.

6:50 Beams dumped for Energy Saving Time.
Magnet was powered down to 500 A.

8.00 Orito & Steffen on shift.

10.00 Ex-changed cable in TBG multiplicity output, should effect Hadron and TAGG 2tr. trigger

12.00 Several Nord hang up's produced by JDAS ERROR 50 BR 2, but all CAMAC crates online
" 61 SUB 1372
"NO TRIGGERS"

News histogram: #9 TOF TEST PULSES, the old YAMON B.N. special
⇒ Error message: "JETC ILLEGAL ADC VALUE" disabled for the time being

Rejection NSD	MIP	TOF	$\langle \mathcal{L} \rangle$ $\times 10^{30}$	$\int$ Ldt Run	$\int$ Ldt Exp	IBM TAPE	BP [V]	T2 Rej. Ev. Fr (%)	Bhab.	MH	E_{beam}	Remarks

15:24 Watch the Magnet, sometime it starts floating downwards.

17:26 JDAS Errors 00061 Siberror 001700 001206 004123 during run 10203.

17:30~H Magnet fluctuating for run 10203, called experts.

16:00 Kawabata & Haidt
17:30 K group fixed Magnet.
19:30 New filling.
20:35 JDAS ERROR 61-1113, 61-4051, 61-7654
20:48 Jet chamber high current (ID-Trip)
21:30 at the run 10207, PKR changed frequency without announce. Because of that we got ID-Trip. and BP current went very high. We asked PKR to optimize. → Beam lost.

23:55 One of the linear-sum chips of lead glasses was found to be dead. The effect was 8/2520 in the barrel part. The dead chip was replaced with new one and the latter was checked with pulser. From run # 10208, all channels should be OK. H. Takeda

[For the experts.
CRATE #4, STATION #2, ch 1 ~ 8]

17.2.82.

0:00 Sato & Petersen on shift

0:45 JDAS ERROR 000044 SUBERROR 000205

0:55 Muon digitiser missing #41

2:30 IBM ONLINE-50B ERROR CHECK 2
JDAS ERROR 44 703

2:40 N50 BUSY → S70P Run 10213 Memory out of range AT 120110
120110 / 165231700012 CPR 17, 0012, 12, 16
Arithmetic overflow
mem. out of range

2:52 N10/50 Reloaded, we restarted

Run	Date	Start	Stop	I+ at Run start	I− at Run start	DT (%)	Time (s)	Rec out	All ×10⁶	To rej ×10⁶	T1 Acc Sum	T2 Acc Sum	T1 Bit 2 E2>3GeV	T2 Bit 17 2T·E4·2Tr	Rejection NSD	Rejection MIP	Rejection TOF	⟨L⟩ ×10³⁰	∫Ldt Run	∫Ldt Exp	IBM Tape	BP [V]	T2 Rej. Ev Fr (%)	Bhab.	MH	E beam	Remarks
48																											49
10193	16.2.82	6:22	6:49	7.3	8.1	9.8	1610	3618	393	38.5	1977	3564	135	986	341	ON	ON	ON	5.74	8.67	1183.04	IBM	0.57	60	88	4	17.300	beam dumped
10194	16.2.82	Jump,		No Mag. field				Short (~1 min) Run.																			
10195	16.2.82	11:17	11:38	10.1	8.8	12	2498	6997	650	79	3771	6903	336	322	579	ON	ON	ON	6.65	16.60	1199.64	"	0.7	89%	208	4	17.300	stopped by spurious TOX Error
10196	"	12:01	12:04	9.9	8.7	12.4	177	541	46	5.7	41	127	22	142	71	ON	ON	ON	6.86	1.21	1200.85	"	0.5		15	0	"	Hang ups
10197	"	12:09	12:12	9.8	8.5	12.0	130	439	34	4	30	381	20	112	34	ON	ON	ON	6.99	6.91	1201.76	"	0.5		14	0	"	
10198	"	12:16	13:06	8.6	7.5	11.1	3019	8002	786	8.7	699	8009	341	2158	1071	"	"	"	6.15	18.56	1220.32	"	0.5		216	9	"	
10199	"	13:07	14:04	7.6	6.5	9.3	3386	8002	882	8.	799	7498	311	2276	840	"	"	"	5.73	19.40	1239.72	"	0.5		224	2	"	
10200	"	14:04	15:00	6.8	5.7	7.9	3345	7076	871	6.8	802	6921	268	1999	703	"	"	"	5.15	17.22	1256.94	"	0.4		199	2		
10201	"	)																										mean pack at 7400 only
10202	"	)	Test runs not for physics																									Magnet went down from 9 to 7.5 (with) in 5 minutes
10203	"	16:19	16:57	6.0	5.0	7.0	996	1905	259	18.2	1094 1658	1658 1658	74	541	173	"	"	"	3.99	3.87	1260.91	"		55	36	3	17.300	
10204	"	19:40	20:24	9.4	9.1	12.8	2643	8002	677	87.2	4481	7523	326	2158	1065	"	"	"	8.84	23.10	1284.01	IBM	0.8	59	331	6	"	
10205	"	20:24	20:58	8.6	8.3	15.0	1584	4543	412	62.0	2553	4283	176	1247 136	604	"	"	"	8.71	13.79	1297.80	"	0.65	60	154	8	"	
10206	"	20:58	21:46	7.6	7.3	12.1	2814	8002	733	88.6	4451	7824	303	2212 886	1104	"	"	"	7.54	21.23	1319.03	"		64	49	8	"	
10207	"	21:46	22:02	6.8	6.8	31.3	837	3160	218	68.0	1487	3901	190	716	693	"	"	"	5.30	4.44	1323.47	"						
10208	17.2.82	0:30	1:15	9.4	9.5	15.2	2660	8002	693	106	4434	7524	200	2233	1120	"	"	"	8.35	22.20	1345.67	"	0.8	59 58	258	6	"	
10209	"	1:16	2:06	8.4	8.5	11.2	2979	8002	775	86.9	4316	7715	319	2240	1114	"	"	"	6.33	18.86	1364.53	"	0.65	60 58	239	4	"	Stopped due to IBM busy
10210	"	2:06	2:27	7.9	8.0	10.4	1232	3354	320	33.4	287	2924	139	948	381	"	"	"	4.10	8.75	1383.28	"	0.55	57%	111	2	"	
10211	dump																						0.53					
10212	"	2:33	3:30	6.8	6.9	9.5	3374	8002	879	83.6	4574	7187	263	2272	876	"	"	"	6.51	22.01	1385.29	"	0.50	58%	260	6	"	
10213	"	3:30	3:39	6.7	6.7	7.8	500	1133	130	10.1	656	913	35	352	123	"	"	"	5.93	2.94	1392.6	"	0.45	55%	43	0	"	Stopped due to N50 busy
10214																											
1026		3:53	4:21	6.1	6.2	9.4	1735	2850	373	35.0	1557	3493	95	478	214	"	"	"	4.11	5.89	1404.15	"		65%	81	3	"	Beam dumped
10217	"	5:00	5:46	9.2	9.4	12.9	2761	8002	719	93	4321	7715	353	2143	1110	"	"	"	7.42	20.49	1424.64	"	0.8	58%	258	9	"	Run lost
10218	"	5:42	5:52	9.2	9.4	11.6	316	953	82	9.5	504	840	39	254	135	"	"	"	4.08	2.24	1426.88	"	0.67	56%	78	2	"	Beam dumped
10219	"	6:19	6:51	9.0	9.3	11.7	1966	6791	512	88	3563	6853	344	1783	988	"	"	"	7.72	15.18	1442.06	"	0.8	60%	167	5	"	stopped by spurious "data offline"
10220	"	09:33	09:36	10.7	10.2	13.2	209	689	544	7.2	387	615	24	189	75	"	"	"	8.56	1.79	1443.85	FII 124	0.85	59	25 232	4	17.300	
10221	"	9:42	10:32	9.4	8.9	12.2	2710	8002	705	85.9	4382	7387	349	2188	1061	"	"	"	7.84	21.24	1465.09	FII 124	0.75	58	238	7	"	
10222	"	10:36	11:26	8.2	7.8	10.6	3006	8002	782	83.2	4417	7338	337	2228	975	"	"	"	6.66	20.03	1485.12	FII 126	0.6	58	238	6	"	
10223	"	11:30	12:28	7.2	6.8	9.1	3460	8002	900	81.7	4418 3	7469	316	2279	894	"	"	"	5.54	19.18	1504.30	F11 193	0.54	58	224	5	"	
10224	"	12:28	12:30	7.1	6.8	24.9	21	76	5.7	1.4	38	41	0	19	9	"	"	"	5.57	0.12	1504.42	IBM	0.53	44	1	0	"	
10225	"	13:14	14:00	9.0	10.0	12.4	2568	7605	669	83.2	4149	7058	329	2109	970	"	"	"	7.49	19.24	1523.66	IBM	0.78	58	249	6	"	Stopped due to IBM down

467 + 117 = 584

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 reg $\times 10^6$	T_1 Acc Sum	T_2 Acc Sum	T_1 Bit 2 $E_{th} > 6$ GeV	T_2 Bit 17 $2T \cdot E_{th} \cdot 2\tau$	Reaction NSD	MIP	TDF	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T2 Rej. Ev Fr (%)	Bhab.	MH	E_{beam}	Remarks

17/2/82

~4:00 BP current suddenly increased (~~by~~ factor 10). (→ ID High current → off ID)
It recovered in a minute.

08:00 Ball, Matsumura on shift.

9:07 Magnet ON

09:25 Beams ready. BP ~0.9. IBM link problem. F58 promise it will be ready in a few minutes. We wait.

09:30 Still problems with link. F58 say it may take a while. Decide to write to tape. Tape F11124 after 681 evts. IDAS error 50 subsys 2
45 " 1 + long series of Iox errors on printer.

stop run 10220. Do a DAS-ST. (we are informed that this is 'pretty useless'!). Reload NORD.
Start run 10221 — again to tape F11124.

09:53 IDAS error 61 subsys 1200
" 7763 but don't kill run.
" 1010
" 4047

10:03 ID trip. Reset OK.

10:06 " " BP reading steady at ~0.65.

11:30 Magnet Proplem Misbehaved at start of run 10223. Was low ~7440. After command Go 7500, it climbed to 7600 and was still rising. However, a further Go 7500 brought it back to normal.
Refill at 12:30.

11:51 ~~Do~~ IDAS errors 61 subsys 1455, 1301, 1073.

12:27 IBM now O.K.

12:30 Beam dumped

14:00 IBM down Run stopped (10225)

14:02 IBM OK Run 10226 started

14:05 IBM down Run stopped

14:08 Run 10227 on Tape F11131

14:48 ID Trip Nord down

14:54 Beam lost Run Summary 10227 lost

Now KURZE UNTERBRECHUNG message appears.

15:30 New fill ready. More magnet problems — had drifted down to 7406 (following NORD crash?) once again, after Go 7500 command it climbs steadily, past 7550+ still rising. Bring it back with another Go 7500. Is this a problem with magnet control program.

15:40 Test runs in progress

15:40 Start writing to IBM. Notice run number (10227) is same as previous run to tape F11 131. Also the IBM event counter stays at zero. Stop run after 389 evts. Probably these are not written to IBM. We made no entries in run-table, but the run-summary is in the folder

15:47 Start run 10228.

16^{00} Haidt & Takeda on shift

16:25 Beams lost.
I found many funny things in RUN # 10228.
1) Energy histogram of lead glass shows a sharp peak at around 0.
2) In the run summary, T1 bit-12 shows a funny thing.
# of T1 = 732 (scaler)
accepted = 168.
This bit corresponds to Barrel energy trigger, and these events should be accepted unconditionally.

17^{00} Magnet → 500A Energy saving time.

19^{11} Run magnet up. It does not stop at 7500, switch to manual and get it down to 7500 and switch back to computer

19:20 RUN 10229 started. Run summary and lead glass energy histograms were checked immediately and they were quite normal in this run. What happened in the last run?

23^{00} The magnet current remained stable

23^{35} YSPY detected error in forward counters. There is an inefficient part in hit map. But whom can we call? No "ON-call" list is on the wall. B. Naroska is coming for the next shift. We decided to wait for her. I exchanged the 2nd TDC in FWMU counters, now they look alright.

Run	Date	Start	Stop	at Run start I+	at Run start I-	DT (%)	Time (s)	Rec out	All x10⁶	T0 rej x10⁶	T1 ACC Sum	T2 ACC Sum	T1 Bit 2 E2>3660	T2 Bit 17 2T·E4·2Tr	NSf	MP16	TOF-MF	<L> x10³⁰	∫Ldt Run	∫Ldt Exp	IBM/Tape	BP [T]	T2 Reject Event Fr %	# Bhabhas	# MH	Beam Energy	TDC 85	Remarks
10226	17.2.82	14:03	14:04	8.9	9.9	12.5	58	211	15.0	1.9	95	177	7	50	34	ON	ON	7.18	0.42	1524.08	IBM	0.63	47	9	1	17300		stopped due to IBM down
10227	"	14:08														"	"				TAPE F11 131	0.63						beam lost Nord down Run Summary lost. TV lost
10228	"	15:47	16:25	~9.0	-9.0	12.8	2234	6575	5814	744	3477	6453	252	1793	854	"	"	6.22	13.90	1547.98	IBM	0.68	68	36	0			many funny things ∇ see p. 54
10229	"	19:20	20:08	9.98	10.05	12.0	2825	8002	7350	88.5	4460	7410	303	2196	1040	"	"	7.88	22.26	1570.24	"	0.63	58	271	5	17.300		
10230	"	20:08	21:00	8.90	8.96	10.3	3103	8002	807.4	82.9	4480	7357	325	2234	938	"	"	7.12	22.08	1592.32	"	0.55	58	271	12	"		
10231	"	21:00	21:57	9.87	9.93	9.9	3335	8002	867.6	85.5	4423	7398	297	2205	935	"	"	5.91	19.71	1612.03	"	0.53	58	220	11	"		
10232	"	21:57	22:27	6.95	7.02	8.3	1754	3959	456.3	39.9	2157	3580	140	1105	400	"	"	5.15	9.04	1621.07	"	0.45	56	112	5	"		
10233	"	23:08	23:41	11.13	11.24	14.7	1959	6474	569.8	74.8	3393	6583	270	1706	1106	"	"	8.30	16.26	1639.33	"	0.85	59	184	6	"		
10234	"	23:56	00:42	8.6	8.7	12.2	2747	8002	715.0	87.3	4136 ~~10014~~	10057	375	2160	1219	"	"	6.11	16.78	1654.11	"	0.65	58	191	11	"		
10235	18.02.82	00:43	01:33	7.6	7.8	10.8	3009	8002	782.4	84.7	4287	7778	310	2300	1125	ON	ON	5.74	17.27	1671.38	"	0.55	58	218	13	"		
10236	"	02:25	03:14	6.1	6.2	8.6	2928	6489	761.4	65.7	3642	6141	249	1887	701	"	"	5.08	14.86	1686.24	"	05	58	172	6	"		beams dumped
10237	"	3.45	4.25	9.9	9.7	14.4	2366	8002	614.9	88.8	4313	7747	346	2207	1275	"	"	8.70	20.59	1706.83	"	0.75	59	241	5	"		
10238	"	4.26	5.09	8.8	8.6	13.3	2538	8002	660.0	87.9	4200	7914	341	2135	1244	"	"	7.88	20.00	1726.83	"	0.70	58	232	10	"		
10239	"	5.09	5.31	8.4	8.1	11.5	1291	3697	335.5	38.7	1958	3575	149	1057	488	"	"	6.62	8.55	1735.38	"	0.60	58	115	3	"		Ended due to "BAD EV. STRUCT.
10240	"	5.34	5.55	7.9	7.7	13.9	1229	3082	319.6	64.3	1596	3092	119	821	472	"	"	5.37	6.60	1741.98	"	0.57	58	95	4	"		
10241	"	5:56	6.0	7.8	7.6	10.6	222	634	57.7	6.1	293	588	23	158	95			5.17	1.33	1743.31	"	0.55	55	16	0	"		
10242	"	11:58	12:01	3.1	6.3	50.3	78	201	20.6	10.3	90	107	3	61	19	"	"	2.12	0.17	1743.48	"	0.8	62	3	0	"		beams lost.
10243	"	13:05	13:34	10.7	10.5	15.8	1668	5793	434	68.4	3078	5730	230	1612	944	"	"	8.45	14.10	1757.58	"	0.82	59	168	6	"		Beams dumped.
10244	"	16:46	16:51	9.8	11.0	12.8	247	722	64.4	8.2	0.8	754	22	200	101	"	"	5.16	1.27	1758.75	"	0.75	58	17	1	"		Beam dumped for energy saving.
10245	"	20:07	20:24	10.7	10.8	24.1	1015	3866	264.2	63.6	45	4023	156	911	777	"	"	8.66	8.79	1767.54	"	0.98	60	102	2	"		Beams lost
10246	"																					0.79						NORD50 crashed, no run summary
10246																						0.73						run # did not increase, so stop it
10247																						0.73						could not stop
10248	Short runs due to troubles and tests																											
10249																												
10250																												
10251	"	22:14	23:06	8.0	8.2	9.6	3144	8002	818	78.3	4602	6521	329	1966	1522	"	"	7.59	23.86	1791.40	"	0.60	55	294	8	"		
10252	"	83:07	00:09	6.9	7.1	8.2	3703	8002	964	78.9	4560	6680	351	1836	1361	ON	ON	6.30	23.33	1814.73	"	0.50	56	264	13	17300		
10253	Shot run - "no trigger"																											
10254	19.02.82	00:14	00:38	6.5	6.7	6.8	1385	2563	3793	245	1434 36	2236	123	632	411	"	"	5.20	7.20	1821.93	"	0.40	57	63	0	"		Beams dumped
10255	"	01:16	02:06	8.7	8.5	10.2	3083	8002	802	81.9	4489	7032	354	1843	1969	"	"	6.95	21.44	1843.37	"	0.60	57	275	7	"		
10256	"	02:06	03:04	7.5	7.2	8.9	3452	8002	899	78.9	4688	6880	313	1942	1731	"	"	6.32	21.81	1865.18	"	0.55	58	277	3	"		
10257	"	03:14	03:49	6.1	6.0	7.7	2099	8 4455	546	42.1	2489	3874	141	1047	906	"	"	5.30	11.12	1876.30	"	0.5	55	147	3	"		Beam lost
																								5244	135	= 719		

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 req $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bid 2 $E_q > 6$ GeV	T_2 Bid 17 $2T \cdot E_q \cdot 2\pi$	Rejection NSD	Rejection MIP	Rejection TOF	$\langle L \rangle$ $\times 10^{30}$	$\int$ Ldt Run	$\int$ Ldt Exp	IBM TAPE	BP [V]	T2 Rej Ev Fr (%)	Bhab.	MH	E_{beam}	Remarks

17/2/82

23:41 Nord 50 stopped. We stopped run.

Status
Memory out of range at 155442
155442/20423540013 LDR 54, 0013, 10, 00, I
ARITHMETIC OVERFLOW

LAST START ADDRESS: 155442
LAST MEMORY REF. ADDR 2736070
LAST DATA TO/FROM MEMORY 4225600044
BREAKPOINT REG 1 (BP) 77140
" 2 (BQ) 100000

Restarted Nord → OK.

20[02]/0[00] 18.2.82 Marshall + Navoksa on Shift

3 JDAS errors all 00061 suberror 2004, 2415 and 2415.

"Muon crate missing" "Faulty part 8" makes regular appearance on colourscreen but always goes away.

2.10 ID Temp. 24.8°
2.30 N50 crashed Mem. out of range at 155442
Last St. Adr
Last Mem Ref Adr 2736070
BP1 77140
Reload N10
Run Summary 10236 lost. ← run probably exists twice
2.50 JDAS ERR 61 SUBE. 1443
3.15 beams dumped
3.30 T_{ID} = 24.75
4.00 JDAS ERR 61 SUB 7763
4.10 61 4047
4.50 61 1230
5.00 T_{ID} = 24.9

Seems the same as above!

5.30 JDAS ERR 61 SUB 4047
SUB 1314

IBM ONLINECHECK 2
BAD EV STRUCTURE, STOPRUN, EXIT JDAS, start again
5.45. JDAS ERR. 63 SUB 300 → IBM ONLINE CHECK 2
6.00 beams lost } Sende beams fall
6.20 Short break }
No more beams before Energy Saving, run down magnet.

8:00 Ball + Yamada on shift
10:00 PETRA injection starts
10:50 Stable beams, magnet → 7500A, but test runs still in progress (e.g. DL)
11:57 Start run 10242.
after 150 evts. jet ch. high current message. fault part 46. Can see whole chamber drawing very high current on scope (5 graduations above normal). Should it have tripped?? Switch off, allow beam pipe current to settle. ½ positrons were lost. PKR decide to refill. Stop run 10242.
12[00] Ball swops with McCann.
13[01] After many attempts, beams finally get to 17.3 GeV; $I^+ \simeq I^- \simeq 11.5$ mA

13[15] MUON DIGITISER # 41 has only one chamber in it (out of 4 available channels). Therefor, due to low statistics, it is prone to be called "dead" by YSPY.

13[24] 3 JDAS errors in rapid succession all 61 { subserror 1055, 1615, 1167

13[25] + 3 more — now getting many and then goes quiet again.

13[34] PKR send TV message to switch off — even though beam seems ok and has ~ 10 mA/beam. We hesitate and then beam is dumped ∴ ID Trip
One RD Hever was the chief hesitator!! Power supply trouble.

13:50 Tagging EHTs adjusted.

Run	Date	Start	Stop	I+ (at Run start)	I−	DT (%)	Time (s)	Rec out	All ×10⁶	To. red. ×10⁶	T1 ACC Sum	T2 ACC Sum	T1 Bid 2 Eq>6GeV	T2 Bid 17 2T·Eq·2tr

Rejection NSD	MIP	TOF	⟨L⟩ ×10³⁰	∫Ldt Run	∫Ldt Exp	IBM TAPE	BP [V]	T2 Rej.Ev Fr (%)	Bhab.	MH	E beam	Remarks

18/2/82

16:00 Glendinning and Watanabe
16:38 Fill ready but discover magnet has been run down. (this information was not conveyed to us nor written! in book)
16:45 Start 10244
16:50 energy saving. magnet to 500A.
20:07 Finally beams ready. Start 10245. BP ≃ 1V. PKR optimizes. now 0.78V
Memory out of range at 120110
LDR 17, 12, 12, 16
Last start address 155442
bp 1 77140
NORDSO stopped.

LG total energy threshold ~~set~~ was raised to ≥5GeV from 3.0GeV according to the group decision. (Takeda)

21.10 Discrim. for TOFCOUNTER 79 was broken, replaced, now it works.
JDAS ERR 63 SUBE. 1315

STOP to put in 2TBG · $\overline{>7\,TOF}$, but NORD does not allow "STOP"
reload NORD.
Now discovered that MIPROC is off. Stop run and turn it on.
Now find that display does not show TOF at all nor the information on bits etc.
Dittmann came just on time.

22.45 2TBG · 2track triggs changed to 2TBG · ≤6TOF from run 10251.

Instruction for NORDSO HUNG from Dittmann.

① Just restart the NORD
② Becareful with the run #. If it is the same as the last one, stop immediately and start again to have a new run #.

2300 Now the dedicated people have left and the control room has become quiet again
(Dittmann, Narioka, Yamada)

23:40 YVOLTS error. it says on the teletype that LG/BP HV counter no responce 15-23 and LG/BP power supply 18, 20, -23 all → 0 instead of 1.97
But all the high voltages are physically on. Must be some read error
Just acknowledge now and see if it happens again.

00⁰⁰ 19.2.82 Felt + Marshall on shift

Run 10253 scrapped — no triggers — problem disappears when new run starts

Start of each run is associated with HV FEED ERROR — all counter HV are printed out on teletype. Have to let whole list print before accepting cmd.

2⁰⁰ Mariona and Watanabe fixed the HV-read out
3⁰⁰ During Run 10256 could the Tektronix display not be freed reload Nord
4⁰⁰ problem with transmitter during ~~new~~ polling procedure
6⁵⁰ Nord Ramp up - power supply starts - leave it for the new crew to start Nord again
7⁰⁰ noticed that the Tektronix Right ramp display show only every second wire recently { 'can be changed with F18 in 'VIEW OPTIONS'

08:00 Ball, Hanzaki on shift
08 50 Reload NORD
09:15 'short break' PKR investigating transmitter problem.
10:48 Magnet → 7500A. Start run 10260.
10:54 ID trip. (HV output & Anode current)
11:13 "
11:36 "
13:09 JDAS ERROR 44 - 203.
13:15 ID trip & JDAS error 44-205.
13:24 Beams lost.

14:20 New fill ready. Start run 10263.
14:37 run 10263 stopped to allow tests runs by R.D. Heuer.
15:00 Beams lost.
16:00 Barloo + Kobayashi on shift.

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All ×10⁶	To Rej ×10⁶	T_1 Acc Sum	T_2 Acc Sum	T_1 Bit 2 $E_{sum} > 6$ GeV	T_2 Bit 17 $2T \cdot E_t \cdot 2T_t$	Rejection NSO	Rejection MIP	Rejection TOF	$\langle L \rangle$ ×10³⁰	$\int L dt$ Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T2 Rej Ev Tr (%)	Bhabh.	MH	E_{beam}	Remarks
58																											59
10258	19.02.82	05:33	06:25	7.9	9.3	9.9	3096	8002	804.8	79.9	4553	6757	386	1910	1617		ON	ON	7.52	23.27	1849.57	IBM	0.65	57	279	7	17.300	
10259	"	06:35	6:44	9.4	8.1	9.5	1097	2871	2856	27.2	1614	2371	140	662	555		"	"	7.28	7.99	1907.56	"	0.60	55	96	2	"	Beam dumped energy wrong
10260	"	10:49	11:05	10.4	10.9	13.5	821	2507	2136	28.8	1419	2041	125	568	578		"	"	8.95	7.35	1914.91	"	0.90	56	83	4	"	
10261	"	11:29	12:23	8.5	8.9	9.5	3161	8002	822.6	78.1	4684	6489	321	1946	1591		"	"	7.71	24.38	1939.29	"	0.70	56	282	12	"	
10262	"	12:24	13:24	7.4	7.7	8.4	3398	7684	884.3	74.5	4505	6290	323	1869	1352		"	"	6.96	23.65	1962.94	"	0.52	57	288	7	"	Beams lost
10263	"	14:32	14:37	9.7	8.9	10.7	864	2334	225	24.1	1371	1868	110	568	477		"	"	7.79	6.73	1969.67	"	0.7	57	74	1	"	stopped for test runs. Beams lost (15 sec)
10267	"	19:57	20:56	8.8	9.3	11.2	3481	7676	905.6	101.7	2871	8886	1089	976	2949		"	"	7.77	27.04	1996.71	"	0.7	59	363	9	"	Run 264–266 not start-failed to start.
10268	"	20:57	21:11	/	/	12.2	883	1943	230.0	27.9	648	2454	288	210	871		"	"	6.95	6.13	2002.84	"	0.7	60	76	3	"	Beams lost ① correct DL8 start-clock.
10269	"	22:37	22:39	11.4	10.7	—	—	36	0	0	6	0	3	2	10		—	—	0	0	2002.84	"	0.9	0	1	0	"	Beams lost ② "final" LG trigger term of
10270	20.02.82	0:08	0.17	10.0	10.3	12.6	527	1250	137	17.4	517	1444	93	160	506		"	"	10.57	5.57	2008.41	"	1.0	57	64	2	"	
10271	"	0:23	1:11	8.7	9.0	13.3	2840	7101	739	98.1	2760	9087	537	910	3416		"	"	9.34	26.52	2034.93	"	0.8	59	316	8	"	
10272	"	1:12	1:47	7.9	8.2	14.1	2058	5142	585	75.4	1801	7104	451	625	2706		"	ON OFF	7.99	16.44	2051.37	"	0.9	60	188	4	"	
10273	"	1:50	2:43	6.9	7.1	13.5	3019	7785	786	106	2408	11278	732	808	4600		"	OFF	7.12	21.50	2072.87	"	0.8	60	254	9	"	
10274	"	2:49	3:19	6.3	6.6	15.7	1516	4037	394	61.8	1075	6060	536	331	2441		ON	ON	5.87	8.90	2081.77	"	0.95	61	104	4	"	Beams dumped
10275	— very short run —																ON	OFF	OFF									
10276	"	4:33	5:28	8.5	9.2	10.6	3287	7799	855	90.8	2822	10081	889	990	3233		ON	OFF	OFF	7.93	26.06	2107.83	"	0.9	60	345	10	"	
10277	"							≈4000									"	"	"									Run summary lost, Beams lost N10 hung up.
10278																	ON	OFF	OFF			IBM	0.8					Run summary lost N50 hung.
279–285	Junk runs, no data written																											Junk
10286	"	9:41	9:47	8.7	7.8	12.7	342	888	89.0	11.3	261	1210	137	84	426		ON	ON	ON	6.75	2.31	2110.14	IBM	—	61	21	0	"	Data written to IBM, but probably TOFwrong
10287	"	10:05	10:06	8.0	7.4	13.7	43	171	11.1	1.5	57	154	19	22	85		"	"	"	6.32	0.27	2110.41	"	—	46	9	0	"	
10288	Run summary is lost.																						0.8					
10289	"	10:18	1045		7.3	6.8	1374	3802	358	42	968	4581	488	319	1708		"	"	"	5.74	7.88	2118.23	"	0.8	62	90	5	"	
10290	"	10:46	11:02	7.0	6.5	12.7	925	2171	241	30.6	618	3245	333	215	1238		"	"	"	5.45	5.04	2123.33	"	0.75	63	64	2	"	
10291	"																						1.2					No Run summary, N50 not in
10292	"	12.38	12:48	10.2	10.7	13.0	519	1396	118	17.5	543	1729	207	177	602		ON	ON	ON	9.03	4.69	2128.02	"	1,0	63	55	3	"	beams lost.
10293	"	13,25	13,42	10.5	10.2	18.5	718	1968	187	35	645	2452	363	223	980		"	"	"	9.71	6.97	2134.99	"	0,87	62	72	3	"	beams lost
10294	"	14.52	15,41	9.5	9.1	12.8	2820	7714	760	97	2984	9698	841	1034	3408		"	"	"	9.68	28,27	2163,26 2170.83	"	1,0	60	378	14	"	
10295	"	15.42	15.57	9.5	9.1	13.2	883	2278	229	30.4	804	3040	290	279	1096		"	"	"	7.57 → 8.57	2174.83		"	.97	61	90	3	"	
296	"	16.29	16.34				236	574												7.01	1.66			.82	59				
297	"	16.36	17.05	8.0	7.6	10.1	1645	3744	427	43.4	1333	4698	416	441	1466		"	"	"	7.39	12.15	2184,64	"	.79	59				
298	"	17.24	17.42	6.9	7.3	9.2	1045	2152	271	24.9	743	2846	213	222	852		"	"	"	6.61	6.91	2191.55	"	.62	58	79	0	"	
299	"	17:53	18:44	6.0	6.4	8.1	3043	5648	792	64.1	1920 ~~1366~~	~~2366~~ 7366	544	635	2058		"	"	"	5.70	17.34	2208.89	"		58	215	6	"	
300	"	19.41	19.52	9.7	9.9	10.6	622	1535	839	66	592	1738	168	195	524		"	"	"	8.64	5.37	2214.26	"	.85	58	66	4	"	
301	"	20.37	21.31	7.4	7.7	7.9	3226	6069	161	17.1	2445	7107	533	823	1743		"	"	"	7.01	22.64	2236.87	"	.70	58	262	9	"	214 + 131 = 850

Run	Date	Start	Stop	I+ (at Run start)	I− (at Run start)	DT (%)	Time (s)	Rec out	All ×10⁶	To: req ×10⁶	T1 Acc Sum	T2 Acc Sum	T1 Bit 2 E_T>6 GeV	T2 Bit 17 2T·E_T·2T

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19/2/82

19²⁰ Beams back. Magnet run up to 7500 A. Heuer + Rieseberg working on DL8's.

19³⁰ NORD 50: DL8 bit test histogram installed (# 28, still with the old title "POINTS/TRACK")
Histogram shows ratio BIT 8 ON / # number of hits.
(However, due to the filling procedure adopted, the expected value of 0.5 is reached after ~ 1000 events).

20⁰⁰ We changed the relative timing Start - clock DL8. With the timing now Run 10267 the bit-problem should be solved. Momentum resolution should be ok now RDH

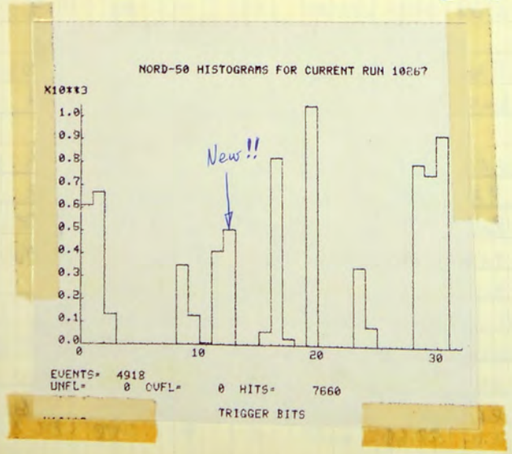
~~Start~~ Run fails to start. Microprocessor reloaded. Now all is well.
Start Data Taking

We changed the LG thresholds from ◉ RUN 10267:

$$\text{OLD}: \begin{cases} E_t > 3 \text{ GeV} \\ B > 2 \\ EC_1 * EC_2 > 0.3 * 0.3 \end{cases} \Rightarrow \text{NEW}: \begin{cases} E_t > 6 \text{ GeV} \\ B > 2.5 \\ EC_1 * EC_2 > 1. * 1. \end{cases}$$

and we added the new trigger (BIT=13): $EC_1 * EC_2 * E_t > 0.3 * 0.3 * 2.5$ GeV.

Typical event rate is now ~ 4 Hz
dead time ~ 10 %
for I+/I− ~ 10 mA.



Run	Date	Start	Stop	I+ (at Run start)	I− (at Run start)	DT (%)	Time (s)	Rec out	All ×10⁶	To: req ×10⁶	T1 Acc Sum	T2 Acc Sum	T1 Bit 2 E_T>6 GeV	T2 Bit 17 2T·E_T·2T	Rejection NSO	Rejection MIP	Rejection TOF	⟨L⟩ ×10³⁰	∫Ldt Run	∫Ldt Exp	IBM TAPE	BP [V]	T2 Rej. Ev. Ti (%)	Bhab.	MH	E_{beam}	Remarks

61

2237 Beams back. DL8 crate power supply trips considerably — replaced. Beams lost.
2400
000 20/02/82
Heinzelmann + Minowa on shift
0 10 Time out 203. Touch trawl cables and start new run → o.k.
1 " Time out 203. Start new run.
1 45 Time out 203. stop the run. start new run with TOF-MIPROC OFF. No time out 203 during the Run 10273
2 49 Reload NORD. TOF-MIPROC ON AGAIN.
~3 00 Time out 203. Switch off the TOF-MIPROC during the run 10274.
4 40 YSPY μ-digitizers missing 15, 16, 39, 40, 41
6 20 Found the run is not moving on. (run 10277)
N 10 stopped at level 9. no error message.
restart N10.
6 25 Beams lost
Short Break.
7 40 Injection Starts.
TOF Timing wrong due to wrong delay since yesterday evening. Corrected now from run 10279 onward.
8:00 Olsson & Odaka on shift.
8:10 NSO busy - No events stop Run, reload. Data with or nothing works, to 1817 incl. Phase Counts
8:30 Counts ok work. NSO is the source of problem
10:30 Counts known. We are taking data again, but NSO error occurred several times. Seems to be related to histogram display. Detector will come and investigate further. Plots want refill at 11⁰⁰
10⁴⁵ Run 10289 stopped, after repeated Timeout in AC2099 74:203
11⁰⁰ Counts back, further bits ⇒ TOF system disturbed by system 1105 Beams dumped
12²⁵ New fill. R10291 without NSO, Counts forgot to return to normal config.
14⁴² R10292 JDAS 63:7661 AC2099 wrong TOF length... missings occur once.
12⁴⁷ Beams lost
13¹⁸ New fill 11.5 × 11.2 BP = 1.5 Optimize ⇒ 0.9 !
Muon people: Crate 8 missing is blocking ever so often, solving this shift took data. You should do something about it
We started run, then suddenly they start optimize again. Our BB = ~~1.43~~ but chamber current looks like ! Pause. ⇒ 0.9 and running again.
13³⁴ Muon chambers 36 missing ——— 131, 132 are nothing on this one, 131 is dead so not unlikely that YSPY will disturb if missing
+~~4~~40 beams lost again.
13:40 Obs: Beam currents are 0 or the run scanning. Not true!

Run	Date	Start	Stop	I+ (at Run start)	I−	DT (%)	Time (s)	Rec out	All ×10⁶	To reg ×10⁶	T1 ACC Sum	T2 ACC Sum	T1 Bit 2 E_T > 6 GeV	T2 Bit 17 2T·E_T·2τ

Rejection NSO	MIP	TOF	⟨L⟩ ×10³⁰	∫Ldt Run	∫Ldt Exp	IBM TAPE	BP [V]	T2 Rej. Ev. Tr (%)	Bhab.	MH	E_beam	Remarks

20/2/82

14:10 "Short Break."
14:48 beams again
15:20 μDig. 15 missing: reset crate 2 (only 2 channels on this digitizer)
16.00 Narostka & Nagaki on shift.
Stop data taking, Odaka investigating L6 problem; channels are missing in Barrel II since run 10292. (10290 still ok)
Taheden and Watchale come to help.
16.28
16.29 Start data taking RUN 10296 → junk.
B.t No bad glass trigger.
16:45 One ADC module was dead. It may be power defect in the board. We exchanged with new one and now ok.
17.00 ID trip
NSO - Program overwritten badly; signals: FETCH high current all the time on Color-TV, Tagging hists empty. P. Dittmann dumps some commons and reloads NSO, now hists more or less ok.

17.30 Discovered that NSO rejection was on by mistake since run 10267, also pattern recognition was running.
Note: NSO rejection should be off (cosmics and T2)
Analysis flags: YES for all except
NO for pattern recognition.
Histograms 100%.

18.05 JDAS ERR 44 SUB 703
63 1755
Pluto announced new filling at 18.15.
18.40 Delayed because of synchrotron problems.
18.50 dump
19.35 beams bad, high BP 1.5 V huge FWMU-rate
19.45 optimization, BP 0.79 now normal.
19.55 JDAS ERR 50 SUB E 2 + lots of IOX error mess. on teletype. Of course no crate is off, we reload MIP (out of previous experience)
Nord stops on Level 14. Restart Nord 10.

20. Restarting doesn't work. We call D. Cords. He'll come.
20.30 He ran memory tests. Now Nord can be started, nobody knows why.
22.15 JDAS ERR 44 SUB E 203
23.10 Beams bad BP 3V !!! after optimization at .9
At runs start NSO stops after 7 ev.
Try: Ex from JDAS, Log in mode RT, RT SETCCL, Start again.
Same effect. Do pas-stat Restart Nord. Data taking now works. Lost 1 error mess.
"False interrupt at 1244" on teletype.

Phone P. Dittmann because it seems impossible to start a run normaly.
He has no idea, but he will think

23.45 NSO died Mem out of range at 120277, LDR 17, 0012, 12, 16
Last Start Adress 155761
BP 1 77140
Break cond set / STORE REF / Parity Err.
Restart N10
Start run, again "False Interrupt" at 1244, Level 12
After 386 ev. Nord hangs on level 9. P. Dittma— comes in again.
Discovers that NSO is interrupted once per second by N10.

21.2.82
0⁰⁰–8⁰⁰ Konomiya. Petersen

0 25 ID Trip due to beam fluctuations
0 37 ID Trip Light current (BP 0.6V) not light
1 20 JDAS error 44 suberror 203
1 40 restart N10 Nord hangs up as usual.
1 50 Jdas error 61 subarror 654
TOF 1 wrong length
4 04 ID trip beam lost
4 57 NORD 50 BUSY → restart N10
5 30-33 ID trip three times due to beam fluctuations
6 08 Magnet fluctuation .7481
6 20 JDAS error 63 suberror 662
7 00 ID trip

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 rej $\times 10^6$	T_1 ACC Sum	T2 ACC Sum	T_1 Bit2 $E_{tot}>6$ GeV	T_2 Bit 17 $2T \cdot E_t \cdot 2\pi$
10304	20.2.82	21.38	22.46	6.3	6.5	6.7	4074	6814	1060	70.8	2602	[illegible]	857	1676
10308	"	23.19	23.43	10.0	9.7	11.2	1455	3504	379	43	1244	4097	433	1302
10309	"	0.08	0.10	9.3	9.0	17.5	431	275	23	4	66	304	26	93
10310, 10311	Noise	hangs up												
10312	21.2.82	0:18	1:39	7.4	7.3	5.0	4188	8002	1090	98	2897	9728	968	2621
10313	"	1.43	2.04	7.0	6.9	6.4	1252	2007	326	21	754	2444	261	520
10314	"	2.44	3.43	9.1	9.0	9.9	3532	8002	919	91	2966	9729	1069	2957
10315	"	3.48	4.04	0.0	0.1	10.7	936	2233	243	26	759	2851	239	1007
10316	"	4.44	4.58	10.3	10.8	9.7	774	1841	201	20	757	2080	234	563
10317	"	5.03	6.15	8.4	8.8	8.5	3876	8002	1008	85	3258	9478	1125	2243
10318	"	6.20	7.45	6.7	7.1	6.3	4910	8002	1276	81	3421	9275	1121	1900
10319	"	7.48	8.00	6.5	6.8	5.5	706	1107	184	10	451	1186	151	209
10320	"	8:46	9.52	8.8	8.9	8.6	3933	8002	1024	88	3282	9432	1081	2452
10321	"	9:55	10:58	8.9	8.9	6.8%	3583	6110	933	64	2514	7256	796	1589
10322	"	11:41	12:02	10.2	10.7	9.2	1253	2839	326	30	1154	3076	391	843
10323	"	12:09	12:44	10.1	10.6	8.8	1812	3843	472	41	1519	4468	526	1196
10324	"	13:56	14:17	11.2	11.4	9.0	1220	2660	318	28	1110	2942	375	774
10325	"	14:56	16:03	8.8	9.4	8.5	4008	8002	1043	89	3167	9569	1059	2427
10326	"	16:04	17:25	8.7	9.3	6.6	4853	8002	1263	84	3268	9428	1098	2030
10327	"	17:26	17:26											
10328	"	17:27	17.44	7.2	7.7	5.7	714	1099	186	11	459	1253	152	215
10329	22.2.82	1.50	2.54	9.2	9.8	8.9	3817	8002	993	88	3361	9285	1094	2634
10330	"	2.55	3.29	8.5	9.0	8.1	2055	4020	534	43	1632	4695	542	1216
10331	"	03:31	04:53	7.0	7.4	6.5	4888	8002	1271	83	3309	9541	1147	2085
10332	"	04:53	05:01	6.9	7.3	5.9	454	667	118	7	264	836	78	173
10333	"	05:28	0638	8.8	8.9	9.5	3748	8002	975	93	3376	9288	1125	2625
10334	"	0639	0649	8.6	8.7	8.0	616	1202	160	13	498	1343	180	17
10335	"	9:22	10:33	8.9	9.4	7.7	4256	8002	1108	85	3432	9104	1179	2370
10336	"	10:35	11:58	6.9	7.6	6.5	4565	7321	1188	78	3121	8470	1023	1894
10337	"	12:56		Run summary lost due to reloading N10.										
10338	"	13:43	13:45	7.4	9.4	6.5	105	380	27	2	81	226	28	65
10339	"	13:51	14:32	6.5	8.4	6.4	2403	3862	626	40	1553	4611	504	1024
10340		— junk —												
10341	"	14:40	14:55	6.2	8.1	6.8	852	1248	222	13	516	1533	163	342

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Rejection NSD	Rejection MIP	Rejection TOF	$\langle L \rangle \times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T2 Rej Ev FR (%)	Bhabh	MH	Beam En	REMARKS
ON	ON	ON	5.84	23.81	2260.68	IBM	.	57	285	12	17300	beam dumped
"	"	"	7.79	11.34	2272.02	"	.9	58%	146	6	"	
"	"	"	7.76	0.62	2272.64	"	.95	57%	8	1	"	Noise problems
							.65					
"	"	"	5.99	25.07	2297.71	"		58%	298	11	"	
"	"	"	5.24	6.56	2304.27	"	.47	57%	91	3	"	beam dumped
"	"	"	7.81	27.59	2331.86	"	.9	58%	349	13	"	
"	"	"	6.77	6.33	2338.19	"	.8	58%	77	0	"	beam lost
"	"	"	9.75	7.55	2345.74	"	.7	56%	92	4	"	Noise 10 hang up
"	"	"	8.32	32.26	2378.00	"		56%	405	8	"	
"	"	"	6.96	34.19	2412.19	"	.5	57	373	22	"	
"	"	"	6.11	4.31	2416.50	"	.4	53%	48	2	"	beams dumped
"	"	"	7.87	30.95	2447.45	"	.7	57%	394	13	"	
"	"	"	6.92	24.79	2472.24	"	0.55	56%	265	14	"	Beams Dumped
"	"	"	8.88	11.12	2483.36	"	0.76	59%	128	6	"	Noise hang problem
"	"	"	8.00	14.49	2497.85	"	0.6	55%	197	3	"	Beams lost.
"	"	"	8.91	10.87	2508.72	"	0.8	55	137	6	"	Beams lost.
"	"	"	7.93	30.97	2539.69	"	0.8	56	343	11	"	
"	"	"	6.16	29.92	2569.61	"	0.56	56	404	9	"	
"	"	"	5.90	0.04	2569.65	"			1	0	"	very short run
"	"	"	6.81	4.87	2574.52	"	?	57	56	1	"	
"	"	"	8.92	34.05	2608.57	"	0.74	57	397	20	17.360	Lot of μ errors.
"	"	"	7.55	15.52	2624.09	"	0.63	56	188	9	"	I.D. TMP
"	"	"	6.49	31.75	2655.84	"	0.55	58	403	17	"	
"	"	"	5.69	2.58	2658.42	"	0.48	59	30	0	"	beams dumped
"	"	"	9.14	34.26	2692.68	"	0.80	57	412	15	"	
"	"	"	7.91	4.87	2697.55	"	0.60	55	57	1	"	beams dumped
"	"	"	8.16	34.72	2732.27	"	0.72	56	407	24	"	
"	"	"	6.58	30.04	2762.31	"	0.58	57	355	11	"	beams dumped
"	"	"				"	.78				"	NORD trouble
"	"	"	5.83	0.61	2762.92	"	0.54		6	1	"	NSD hang up
"	"	"	5.90	14.17	2777.09	"	0.52	56	186	6	"	MIPROC problem
"	"	"	5.50	4.68	2781.77	"		58	43	8	"	NSD hang up
									350+	249 =	1099	

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Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	To reg $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bid 2 $E_\gamma > 6$ GeV	T_2 Bid 17 $2T \cdot E_\gamma \cdot 2\pi r$

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8[00] Barlow, Meier on shift. Beams dumped.
8[15] ID Trip: "HV input alarm". But the HV was switched off ? — how can this happen? Call Heinzelmann
9[00] Ruiz Prefer Cords about NORD restarting. He suggests we try exit + reconfigure at the end of each run.
He may come in later.
Histograms checked.
9.02 Heinzelmann checked ID, everything o.k.
10.30 ID gives HV-Input alarm + HV-Output alarm again, reset -> o.k.
10:59 Beams dumped.
11:07 Magnet fluct., reset current
11:14 Again ID HV-I/O Alarm when ID is switched off
11:15 " "
11:40 New fill. Start run 10322
We have been going through the EXIT—RT2DAS—CONFIGURE process and the computer does not hang at the start of the run.
12-04 several IOX errors occured, reloading 2DAS seems to help. Maybe caused by Linear on branch 2 crate 4
12:15 ID-Alarm (HV I/O)
12:32 " "
12:42 Beams Lost. ID Trips
13:14 ID-Alarm. (HV I/O)
13:22 " " " Input alarm (only, not output alarm!)
13:32 " " " "
13:44 " " " "
13:52 " " " "
13:56 New fill. Start Run 10324
14:17 Beams lost
14:24 ID Alarm — HV Input.
Magnet fluctuation
14:53 New fill.
16:00 Glendinning & Takeda on shift

16:04 RUN 10326 started normally, i.e. without "EXIT-RT-2DAS - CONT" procedure.

Rejection NSD	MIP	TOF	$\langle L \rangle$ $\times 10^{30}$	$\int$ Ldt Run	$\int$ Ldt Exp	IBM TAPE	BP [V]	T2 Rej. Ev. Fr (%)	Bhab.	MH	E_{beam}	Remarks

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~~17[30]~~ ZSEND has been disconnected from the standard data acquisition configure file ZDAS1:DATA, since it causes hang-ups at run-start. It is, however, still available in ~~ZDAS1~~ ZDAS0:DATA. D.C.

17:35 ID tripped due to HV I/O twice.
17:41 Pluto phone: PKR are having trouble with the synchrotron, new fill in 5 mins.
19:03 still no beam, 'Shot Break'.
19:30 now in a 'break'. Restart 22:00 → 23:00
23:33 Synchrotron Interlock fail
Restart 2:00 ?
RUN down magnet to 500A

22nd February 1982

00[00] Watanabe & Rose on Shift

01[05] Injection begins.
01:46 Ready but ID gave alarm immediately. ~~I/O problem~~
01.50 Start run 10329
01.53 JDAS ERROR 00044 suberr 203 Task 1. (Branch 2 crate 3 time-out). TOF counters.
See if it recurs.
Muon crate 8 still up to its old tricks. Crate 11 also occasionally missing.
03.00 Muon crate 8 permanently missing — Reset in h/ware room.
03.00 JDAS error 61 Sub. 536 Task 1. See if it recurs.
03.30 I.D. Trip
05:00 Beams dumped for new fill.
05:28 Beams ready. Start 10333.
05:34 JDAS Error ~~60~~ 44 sub 203 task 1.
05:38 Warning JETCH high current on. On the screen, "background optimization" (and BP > 1V)
Paused and turned off the Jetch. HV, and wait.
BP ~ 0.1 volt ~ 1.5 volt fluctuating
05:43 Back to normal. BP = 0.68 V, Continue.
05:52 JDAS error 44 sub 205 task 1. (TOF wrong length
05:54 5 63 622

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	To reg $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bid 2 $E_\gamma > 6$ GeV	T_2 Bid 17 $2T \cdot E_\gamma \cdot 2\tau$

22/2/82

06:49 Stop for energy saving.
Magnet 500 A.

8:00 Steffen & Kanzaki on shift
9[00] We couldn't raise magnet current because the K-groups people was working on it.
9[20] Magnet 7500 A. Start run 10335.
10[05] Muon digitizers missing : 20. Phoned to A. Ball but he said #20 was also O.K. and the message should disappear soon. It really went away.
10[38] Muon Crate Missing #11. Reset it.
10[46] JDAS error 63-470. TOF2 wrong length.
10[52] JDAS error 61-755
10[59] ID trip (Anode current and HV-output) Beams are unstable. Wait a little and restart.
11[08] " (") Also due to the unstability of Beams.
11[08] JDAS error 46-000
11[15] Magnet fluctuation. ~ 7480 A.
11[23] " ~ 7485 A !
11[28] JDAS error 61-7765
11[31] " " 44-203
12[56] new fill : start run 10337
12[59] JDAS error 44-203
13[31] ID trip. (Anode Current and HV-out) Beams are instable.
13[32] ID trip (").
And Data-Taking System halted! There was no answer from any Terminals.
Reload N10. Run summary for #10377 lost.
13[45] "N50 busy". Try to reload N10 again.
14[22] JDAS error 44-204. And IOX errors on the printer.
But it seems, there is no apperent problem in the H/W room.
Stop run 10399. and start run 10400. → AC 2099. no response.
Reload MIPROC. then it works.
14[55] "No EVENTS" & "N50 Busy". Mr. Dittmann reloaded N50.
15[28] NORD hangs up! Reload N10 and Run Summary of #10342 lost.
Restart data-taking but it has the same run # as the last one, #10342.
Then IBM-event-counter doesn't count at all and used disk space seems not to increase.
Stop #10342 and start #10343. → O.K.

Rejection NSD	MIP	TOF	$\langle L \rangle \times 10^{30}$	$\int$ Ldt Run	$\int$ Ldt Exp	IBM TAPE	BP [V]	T2 Rej. Ev Tr (%)	Bhab.	MH.	E_{beam}	Remarks

16[00] H. McCann and H. Rieseberg on shift.

16[26] IBM error 54 Suberr 140 000 ERR. CNT 2

TRIG	N10	N50	IBM
5603	3431	3420	0

IL = 13.03 nb^{-1}, $\langle L \rangle$ = 5.05

Answer 'YES' to "Try IBM Link Again", IBM no. → back to where it had been before error appeared.

16[29] [EM JDAS ERROR 63 SUB 4006 TASK 1
=

16[46] Stop Run (# 10343) for Energy Saving, Magnet to 500A

R.D. Heuer makes pulser test to study DL8 timing behaviour

Note: In Run # 10343 the DL8 bit test histogram (# 28) is pathological. DL8 # 146 has ≈ 2000, all other DL8's have 1, 0 (4 DL8) or 2 (1 DL8)!

18[15] JDAS ERROR 45 (octal) Suberror 1 Task 1, before JDAS ERROR 44, Suberror 0 and ERROR 37; IOX ERROR Address 110301, Level (dec) 8
110410, Level 8
110416, Level 8
24615 " 8
125041 " 8
054 " 8
etc see printout.

18[30] A. Ball : Muon chamber test run with cosmics

19[45] New filling ready : $I^+ = 11.4$, $I^- = 11.7$ mA, BP ≈ 0.9 V
19[51] Run 10344 started
20[30] Wird beautiful beams, PKR ask us to switch off HV — this was after BP current had shot up by a factor of ~ 6.
We had collected 24 nb^{-1} in ~ 39 minutes in this fill up to this point!
20[35] PKR say they have now cured the temporary instability — data taking continues.
21[05] JDAS error 63 SUB 1317
21[17] When I started looking at Standard Histograms, some error o/p appeared on lineprinter.
22[00] Why does run summary for run 10345 have an overflow in T1 SUM?
23[17] Stop run # 10346 for refilling

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 rej $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 $E_\Sigma > 6$ GeV	T_2 Bit 17 $2T \cdot E_\Sigma \cdot 2\pi$	Rejection NSO, MIP, TOF	$\langle L \rangle$ $\times 10^{30}$	$\int$ Ldt Run	$\int$ Ldt Exp	IBM TAPE	BP [V]	T2 Rej. EV. T_2 (%)	Bhab.	MH	E_{beam}	Remarks

22/2/82

06:49 Stop for energy saving.
Magnet 500 A.

8:00 Steffen & Kanzaki on shift
9 00 We couldn't raise magnet current because the K-group people was working on it.
9 20 Magnet 7500 A. Start run 10335.
10 25 Muon digitizers missing : 20. Phones to A. Ball but he said #20 was also O.K. and the message should disappear soon. It really went away.
10 38 Muon Crate Missing #11. Reset it.
10 46 JDAS error 63-470. TOF2 wrong length.
10 53 JDAS error 61-755
10 59 ID trip (Anode current and HV-output) Beams are unstable. Wait a little and restart.
11 08 " (") Also due to the instability of Beams.
11 08 JDAS error 46-000
11 15 Magnet fluctuation. ~ 7480 A.
11 23 " ~ 7485 A!
11 28 JDAS error 61-7765
11 31 " " 44-203
12 56 new fill : start run 10337
12 59 JDAS error 44-203
13 21 ID trip. (Anode Current and HV-out) Beams are instable.
13 22 ID trip (").
And Data-Taking System halted! There was no answer from any Terminals.
Reload N10. Run summary for #10337 lost.
13 45 "N50 busy". Try to reload N10 again.
14 22 JDAS error 44-284. And IOX errors on the printer.
But it seems there is no apparent problem in the H/W room.
Stop run 10339. and start run 10340. → AC 2099. no response.
Reload MIPROC. then it works.
14 55 "No EVENTS" & "N50 Busy". Mr. Dittmann reloaded N50.
15 28 NORD hangs up! Reload N10 and Run Summary of #10342 lost.
Restart data-taking but it has the same run # as the last one, #10342.
Then IBM-event-counter doesn't count at all and used disk space seems not to increase.
Stop #10342 and start #10343. → O.K.

16 00 H. McCann and H. Rieseberg on shift.

16 26 IBM error 54 Suberr 140 000 ERR. CNT 2

TRIG	N10	N50	IBM
5603	3431	3420	0

IL = 13.03 nb^{-1}, $\langle L \rangle$ = 5.05

Answer 'YES' to "Try IBM Link Again", IBM no. → back to where it had been before error appeared.

16 29 [M JDAS ERROR 63 SUB 4006 TASK 1
=?

16 46 Stop Run (# 10343) for Energy Saving, Magnet to 500A

R.D. Heuer makes pulser test to study DL8 timing behaviour

Note: In Run # 10343 the DL8 bit test histogram (# 28) is pathological. DL8 # 146 has ~ 2000, all other DL8's Run 1, Ø (nDL8) or 2 (nDL8)!

18 15 JDAS ERROR 45 (octal) Suberror 1 Task 1, before JDAS ERROR 44, Suberror Ø
and ERROR 37; IOX ERROR Address 110301, Level(dec) 8
110 410, Level 8
110 416, Level 8
746 15 " 8
125 041 " 8
054 " 8
etc see printout.

18 30 A. Ball: Muon chamber test run with cosmics

19 45 New filling ready: I^+ = 11.4, I^- = 11.7 mA, BP ≈ 0.9 V
19 51 Run 10344 started.
20 30 Wild beautiful beams, PKR ask us to switch off HV — this was after BP current had shot up by a factor of ~ 6.
We had collected 24 nb^{-1} in ~ 39 minutes in this fill up to this point!
20 35 PKR say they have now cured the temporary instability — data taking continues.
21 05 JDAS error 63 SUB 1317
21 17 When I started looking at Standard Histograms, some error o/p appeared on lineprinter.
22 00 Why does run summary for run 10345 have an overflow in T1 SUM?
23 17 Stop run # 10346 for refilling

Run | Date | Start | Stop | I_+ at Run start | I_- at Run start | DT (%) | Time (s) | Rec 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 $2T \cdot E_1 \cdot 2T_2$ | Rejection NSD, MIP, TOF | $\langle L \rangle$ $\times 10^{30}$ | $\int L dt$ Run | $\int L dt$ Exp | IBM TAPE | BP [V] | T2 Rej. Ev. Fraction (%) | Bhabha | MH | E_{beam} | Remarks

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RUN	Date	Start	Stop	I_+	I_-	Dead Time (%)	Time (sec)	Records Out	All Triggers x10⁶	T0 Reject x10⁶	T_1 Acc. Sum	T_2 Acc. Sum	T_1 Bit 2 $E_1 > 6$GeV	T_2 Bit 17 $2T \cdot E_1 \cdot 2T_2$	NSD	MIP	TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp.	IBM /TAPE	BP [V]	T2 Rej Ev Fraction(%)	Bhabha	MH	E_{beam}	Remarks
10342	23.2.82	——	No	Run	Summary	——																0.45				NORD problems
10342	"	15:33	15:42	5.6	7.4	5.4	514	733	134	7	382	843	90	175	ON	ON	ON	5.20	2.67	2781.77	IBM(?)	0.40	58	28	1	17.300	No IBM output ??
10343	"	15:43	16:46	4.9	6.5	7.7	3802	4854	990	76.3	2001	5631	647	973	"	"	"	4.84	18.41	2800.18	"	0.38	56	219	5	"	Beams dumped.
10344	"	19:51	20:31	8.7	8.9	10.9	2344	4970	610	66.6	2233	5457	737	1543	"	"	"	10.33	24.21	2824.39	"	0.85	58	284	10	"	Beam instability.
10345	"	20:38	21:57	7.2	7.3	7.1	4762	8002	1239	87.97	3291	9465	1094	2156	"	"	"	6.66	31.71	2856.10	"	0.63	57	408	17	"	
10346	"	21:57	23.17	5.95	6.08	6.3	4738	7560	1234	77.2	3239	8642	1048	1772	"	"	"	6.65	31.51	2887.61	"	0.60	57	407	10	"	Beams dumped
10349	23/2/82	1:21	2:29	8.8	9.6	8.4	4007	8002	1042	87.6	3456	8758	1136	2057	"	"	"	8.54	34.23	2921.84	"	0.8	56	423	18	"	
10350	"																					0.6					Run summary lost, NORD hang-up
10350*	"	3:14	3:39	5.9	6.9	6.0	1488	2148	387	23.3	856	2589	270	425	"	"	"	5.37	9.00	2929.84	"	0.45	56	89	2	"	beams dumped
10351	"	6:23	8:42					9469							ON	OFF	ON				TAPE F11173						cosmic ray run without mag. field
10352	"	9:48	10:50	9.48	9.5	8.7	3728	8002	970	84.5	3671	8492	1179	2139	ON	ON	ON	10.40	38.177	29 68.61	IBM	0.85	57	465	20	17.300	
10353	"	10:51	11:52	8.0	8.1	7.7	3452	6854	898	69.3	2959	7423	925	1773	"	"	"	8.90	30.73	2999.34	"	0.63	56	336	13	"	Run Stopped due to IBM error - went away
10354	"	11:53	13:11	6.7	6.8	7.0	4637	8002	1206	89.4	3276	9156	1110	1930	"	"	"	6.71	31.13	3030.47	"	0.55	56	405	17	"	
10355	"	13:12	13:27	6.5	6.6	6.1	857	1348	223	13.7	592	1538	193	323	"	"	"	6.10	5.23	3035.70	"	—	58	64	3	"	Beams dumped.
10356	23/2/82	14.16	15.17	9.1	9.3	8.9	3629	8002	945	83.6	3584	8378	1215	2117	ON	ON	ON	10.02	36.37	3072.07	IBM	0.85	56	468	14	17.300	
10357	"	15:18	16:33	9.4	9.6	9.4	4355	8002	1133	83.6	3466	8797	1144	1952	"	"	"	8.07	35.15	3107.22	"	0.68	57	384	8	"	
10358	"	16:33	16:49	9.1	9.3	6.4	950	1538	247	15.7	644	1751	214	332	"	"	"	6.62	6.28	3113.50	"	0.60	57	80	4	"	beams dumped
10359	"	19.31	19:51	10.5	10.8	10.4	1159	2588	302	31.2	1220	2685	422	756	"	"	"	12.15	14.08	3127.58	"	1.0	57	174	4	17.300	
10360	"	20:05	20:35	10.06	10.39	9.4	1781	4057	464	43.7	1778	4438	579	1263	"	"	"	10.69	19.03	3146.61	"	0.8	57	287	6	"	Beams lost
10361	"	21:08	22:03	11:39	11:57	9.7	3294	7496	857	82.8	3436	7889	1159	2048	ON	ON	ON	11.02	36.28	3182.89	"	0.8	57	456	14	17.300	
10362	"	22.09	22.13	9.3	9.6	7.6	187	397	485	37	175	412	62	102	"	"	"	9.79	1.83	3184.72	"	0.75	57	27	0	"	
10363	Bad run																					0.75					
10364	23/2/82	22:16	22:43	8.6	8.8	8.2	1592	3230	414	34.0	1446	3519	482	843	"	"	"	9.45	15.04	3199.76	IBM	0.75	58	189	7	17.300	
10365~10367	Nord 50 trouble																					0.63					
10368	23/2/82	22:59		8.2	8.4			Run	summary		lost				ON	ON	ON	8.06	1.23	3200.99	IBM	0.63	—	144		17.300	
10369	"	23.33	23.42	7.8	7.6	7.2	515	918	133.9	9.7	391	993	124	200	"	"	"	7.93	4.09	3205.08	"		57	38	1	4	beams lost
~~10370~~	~~No trouble~~																					~~0.80~~					beams lost
~~10370~~	24.2.82	02.23	Nord 80 trouble																			0.85					
10370	"	02.30	3.33	8.9	9.2	9.0	3721	8002	968	87.3	3410	9176	1130	2466	ON	ON	ON	9.50	35.35	3240.43	IBM	0.75	58	384	18	"	
10371	"	03.33	4.31	7.6	7.9	7.8	3474	6702	904	70.7	2750	7704	969	1801	"	"	"	7.74	26.88	3267.31	"	0.7	57	373	18	"	beams dumped
10372	"	05.21	06.39	6.7	7.0	6.7	4528	7550	1171	78.4	3163	8726	1055	2076	ON	ON	ON	6.93	31.40	3298.71	"	0.58	56	382	14	"	beams dumped.
10373	"	11 13	12:00	9.8	9.2	8.9	3741	6204	713	63.8	2856	6269	893	1542	"	"	"	10.31	28.26	3326.97	"	0.85	57	351	13	"	
10374	"	12:03	12:06	9.7	9.1	8.0	117	246	31	2.5	98	268	33	63	"	"	—	9.65	1.13	3328.10	"	0.75	57	14	0	"	
10375	"	12:21	13 43	7.6	7.2	7.2	4378	8002	1139	82 ~~1057~~	3483 ~~4062~~	8834	1111	1953	"	"	"	7.88	34.50	3362.60	"	0.85	57	406	14	"	
10376	"	13 43	14:11	7.5	7.1	5.9	1658	2627	431	25.6	1144	2863	384	547	"	"	"	6.46	10.32	3373.32	"	0.60	~~56~~ 136	136	4	"	beams dumped

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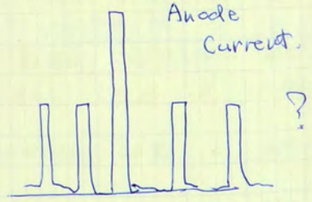
Run	Date	Start	Stop	I_+ at Run start	I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	To rej $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 $E_{cl} > 6$ GeV	T_2 Bit 17 $2T \cdot E_\gamma \cdot 2\pi$	Rejection NSO, MIP, TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T2 Rej. Ev. Fr (%)	Bhab.	MH	E_{beam}	Remarks

23/2/82

0:00 D.Hmann, Meier
0.45 Runs 10347, 10348 lost (test of data acquisition system!)
3:07 NORD hang-up (caused by ~~PRESTO~~ I.D. trip ~~PAUSE~~) -> run summary 10350 lost
3:14 Next run gets same run number (10350*)
4:37 PETRA-Problems (Klicker), Restart 5.15
5:17 " " 6.45
5:20 Magnet switched off
6 oo Both hardcopy functions on the graphics terminals don't work.
6:22 Cosmic Running (B=0)

8.00 Nozaki & Glasdrinning on shift
Continuing to take cosmic ray data without magnetic field
8.43 Stop the cosmic run since ~~PETRA~~ PKR is going to start injection.
Totaly 9469 events were accumulated. Tape F11173
9.00 Magnet raised to 1000 A Copy of the graphics terminals 34 does not work properly.
9.40 Magnet 7520 A. Modfunder is working for terminal 35. Half side is completely black.
9.45 Start luminosity run # 10352
9:57 Now the copy of the terminal 34 is ok.
10:38 JDASERROR 008044 (OCT) SUBERROR 002203 (OCT) TASK 1
13.04 JDAS ERROR " SUBERROR 703 TASK 1

16:00 Navoska & Takeda on shift
We found a funny pattern in JETC Anode current.



16:35 T1-SUM overflowed in RUN summary 10357. ???
16:50 Suddenly appeared "SWITCH OFF HIGH VOLTAGE". Stop. run 10358.
Energy saving time started.
17:15 Tagging EHTs adjusted

19:00 *** LG Special ***
Test ADC ch-Φ is dying. Ch-4 is used for total energy hereafter. (From run 10~~360~~ 359)
Takeda

19.20 Run magnet up.

Barrel > 2.5 GeV On-line scan 50 events

cosmic	28	events
ee	10	
eeγ/eeee	8	
2γ-process/Beamgas	3	
Multihadron	1	
	50	

19.30 BP 5V -> cable 24 out, 5 min late one could put it back.
BP 0.9V.
19.40 YSPY detected hole in TOF latches => counts 28. As Run is trigger input, Itech and find Read latch must be dead. After switching Camac crate off and on again, fault is repaired.
MAGIC ?!?!?
22:45 Stop run 10364 due to Nord 50 Busy.
23.40 JDAS ERR 61 SUBE 633
23.41 beams lost.

24.2.82
0.00 Minowa & Clarke
02.23 At last start run — but NORD crashed after parameter setting.
Re-loaded — seems ok now.
8:00 Fehl, Uhrdt
9 40 difficulties with energy ramping; raise magnet current to 7500 on request of PKR
10 10 again beam trs during ramping
11 10 All ready
13 15 I0 trip
13 30 " "
13 50 Printout of run 10375 shows 57 errs: LG NON-EXISTENG BLOCK ON u.a.
14:40 Tagging EHTs adjusted
15:00 T3 trigger endwall strict/group permanent enables changed to account for latest muon chamber status. T3 accept rate should not change appreciably. AB.

16:00 Loebinger & Kanzaki on shift 24/2/82.
16.50 Start of energy saving.
18 20 JDAS patched, to avoid spurious run numbers 62. D.C.

Run	Date	Start	Stop	I_+ at Run start	I_- at Run start	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 reg $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 $E_+ > 6$ GeV	T_2 Bit 17 $2T \cdot E_+ \cdot 2\tau$
10377	24.2.82	15:13	15 46	11.5	11.0	12.3	1801	4845	495	60.7	119057?	4754	622	1403
10378	"													
10379	15 52	15.53	16.54	~~8.2~~ 7.1	~~6.0~~ 6.9	6.2	3419	5565	890	55.6	2406	6152	798	1148
10382	24/2/82	21.07	22.16	9.2	9.0	8.9	3975	8002	1034	92.2	*** ?	9168	1257	2416
10383	"	22.16	0.08	6.8	6.9	6.3	5120	8002	1332	83.7	3085	9509	1149	1935
10384	25/2/82	0.09	0.43	6.3	6.4	5.3	2026	2859	527	28	1157	3262	413	548
10385	"	1.44	3.05	8.7	8.6	7.7	4461	8002	1160	89.1	3190	9641	1180	2339
10386	"	3.06	4:03	7.6	7.6	6.3	3379	5248	878	50.0	2034	6296	736	1249
10387	"	4:52	5:17	9.7	8.2	7.4	1424	2520	370	27.5	1001	2931	390	671
10388	"	5:22	6:47	8.0	6.6	6.4	5107	8002	1329	84.5	3152	9550	1173	1817
10397	"	10:03	10:53	11.2	11.0	8.1	2709	4953	705	59.3	2033	5638	766	1393
10398	"	11.23	11.55	7.2	7.4	5.9	1900	2820	495	29.3	1150	3323	407	654
10399 }	ID - Pulse on Tape													
10400 }														
10401	~~25~~.2.82	14:06	14:23	11.21	11.17	9.9	998	2302	260	26	935	2588	344	727
10402	25.2.82	19:54	19:59	11.3	11.2	9.8	910	626	64.5	6.3	267	339	105	189
10403	25.2.82	20:15	21:17	9.1	9.1	9.1	3734	8002	971.7	88.0	3306	9254	1238	2517
10404	"	21:18	21:35	8.7	8.7	8.3	1020	2037	265	22	820	2447	~~339~~ 328	662
10405	"	21:36	22:37	8.6	8.6	7.2	3644	6414	984	68	2607	7547	980	7748
10406	26/2/82	01.11	2:09	9.6	9.9	10.6	3425	6832	891	95	2949	7450	1152	1815
10407	"	2:12	2:17	9.4	9.8	7.2	282	481	73.5	5.3	184	560	75	134
10408	"	2:32	2:47	8.7	9.1	8.3	849	1555	222.5	18.2	570	121	192	485
10409	"	2:54	4:06	7.2	7.6	8.2	4287	8002	1115	91.5	3067	9966	1142	2814
10410	"	4.41	6:01	8.2	8.4	7.6	4385	8002	1140	87	3221	9275	1215	2274
10411	"	6.01	6.40	7.4	7.6	6.4	2263	3631	594	38	1402	4374	570	1008
10412	"	9.55	10 35	9.3	9.9	8.3	2391	5027	622	52	2161	5191	682	1273
10413	"	11.01	12.20	7.3	7.8	6.7	4695	8002	1222	82	3423	8972	1288	1950
10414	"	12.20	12.47	6.8	7.4	8.8	1589	2350	413	37	970	2751	371	574
10415	"	12.49	13.02	6.6	7.1	6.2	805	1156	210	13	476	1379	174	263
10416	26.2.82	Resumed	shut after start because of				high background.		Stopped itself.		Printout on console printer			"Error dec NN.
10417	"	15.21	16:39	11.29	9.88	11.3	4443	8002	1156	130	3063	10382	663	3322
10418	"	16.40	16:50	7.5	7.5	6.8	599	842	156	10.5	323	1045	129	223
10419	"	19.36	20:35	9.57	9.47	8.4			run burn lost.		NORD hang.			
~~10420~~	"	~~20.42~~												

Run	Rejection NSO	MIP	TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L\,dt$ Run	$\int L\,dt$ Exp	IBM / TAPE	BP [V]	T_2 reject total fraction (%)	Bhabha	MH	E_{beam}	Remarks
10377	ON	ON	ON	8.72	18.47	3391.79	IBM	0.88	58	218	6	17.300	run stopped due to beam loss
10378													
10379	ON	ON	ON	7.08	24.21	3416.00	IBM	0,60	57	276	14	"	Run stop due to start of Energy Saving
10382	ON	ON	ON	9.17	36.43	3452.43	IBM	0.85	56	468	13	17.300	
10383	ON	ON	ON	6.71	34.36	3486.79	IBM	0.65	55	397	15	"	
10384	ON	ON	ON	6.09	12.33	3498,12	-	?	55	160	4	"	
10385	ON	ON	ON	7.32	32.65	3531.77	IBM	0.86	58	422	12	"	
10386	ON	ON	ON	6.41	21.65	3553 42	IBM	~~0.5~~	56	257	6	"	
10387	ON	ON	ON	7.37	10.50	3563.92	IBM	0.8	58	158	7	-	stop due to p new feature
10388	ON	ON	ON	6.76	34.51	3598.43	IBM	0,7	57	435	13	-	
10397	ON	ON	ON	9.07	24.57	3623.00	IBM	0.8	57	281	10	17300	
10398	ON	ON	ON	6.67	12.67	3635.67	IBM	0.65	57	134	2	17.300	Beams dumped
10399 }													
10400 }													
10401	ON	ON	ON	11.67	11.65	3647.32	IBM	0.84	56	135	8	17300	Beams lost.
10402	on	on	on	10.83	2.68	3650.00	IBM	0.90	54	41	3	17.3	
10403	on	on	on	9.96	37.19	3687.19	"	0.80	57	458	13	17.3	
10404	on	on	on	8.77	8.89	3696.08	"	0.75	58	111	3	17.3	~~beams lost~~
10405	on	on	on	7.55	27.57	3723.59	"	/	57	372	18	"	beams lost
10406	"	"	"	~~8.13~~ 10.13	34.70	3758.29	"	0.8	57	429	14	"	ID trip
10407	"	"	"	6.20	1.75	3760.04	"	0.7	60	24	1	"	" " → backgrd. optim.
10408	"	"	"	6.79	5.77	3765.81	"	0.7	58	59	4	"	IBM error.
10409	"	"	"	7.72	37.08	3798.89	"	0.67	58	398	16	"	Beams dumped
10410	"	"	"	8.26	36.23	3835.12	"	0.85	56	430	11	"	A few ID trips & pauses.
10411	"	"	"	6.79	15.50	3850.62	"	0.61	56	186	1	"	IDAS errors + Energy saving
10412	"	"	"	11.55	27.62	3878.24	"	0.85	56	337	14	"	& NORD BUSY
10413	"	"	"	9.03	42.39	3920.63	"	0.7	56	522	10	"	
10414	"	"	"	6.85	10.89	3931.52	"	0.6	57	128	2	"	
10415	"	"	"	6.40	5.15	3936.67		0.5					
10416	Beam	"	"	16.80	30.23	3966.90	"	0.82					
10417	"	"	"			3970 ~~00~~ 60		0.8	60%	376	12	"	
10418	"	"	"	6.17	3.70			0.6	57%	47	2	"	beam dumped
10419	"	"	"	9.71	31.89		"	0.85					NORD hang up.
~~10420~~								0.8					

13644 + 226 = 13870

Run	Date	Start	Stop	I_+ at Run start	I_- at Run start	DT (%)	Time (s)	Rec out	All $\times 10^6$	To. rej. $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bid 2 $E_{sum} > 6$ GeV	T_2 Bid 17 $2T \cdot E_t \cdot 2\pi$

19:10 Magnet 7500 A.
19:15 LUMI-triggers from now on scaled down by a factor of 16 (before: 10) tw

21.05 New beams ready start run 10382
22.00 I.D. Trip.
22.15 Run 10382 ends – T1 accept sum overflowed again? ← This effect is due to 24 bit-scaler overflow in long runs (not really important)
23.20 I.D. Trip H.V. in/out Hellenbrand fires.

25/2/82

0^{00} W. Bartel, D. Clarke our shift
0^{45} N50 busy hang up out of the blue sky
Memory out of range at: 120276
120276/165231 70012 LDR 17, 0012, 12, 16
Stack overflow
memory out of range
Last abort ADR 155767
" mem. ref. adr. 00640373425
" data to/from mem 20320170002
Brkpnt Rg 1 077140
" " 2 100000
Brk. cond set:
/ parity err / store ref /
0^{47} dumps beams
1^{45} start up again
3^{45} Std. histograms for run 10380
dead min 1000 is new
5^{20} Run stopped no errs
Line printer went crazy IOX-error, error 37 ? what does it mean ??
reload μ-proc. That did it, start new run

6^{45} Stop for power saving
prepare cosmic run
cannot get started error during Lg. pedestal no trigger accepted.
phone Hasenberg, who wrote the instructions. He cannot help either.

Rejection NSO	MIP	TOF	⟨L⟩ $\times 10^{30}$	$\int$ Ldt Run	$\int$ Ldt Exp	IBM TAPE	BP [V]	T2 Rej Ev. Fr (%)	Bhab.	MH	E_{beam}	Remarks

postpone cosmic run until reports arrive.

08.00 Thursday 25/2/82 Takeda & Loehinger

In order to do the requested cosmic run, it was found to be necessary to also disconnect STOP RUN double input (cable 28 & "No Beam") from Trigger Box.
Start up of PETRA generated any cosmic data to tape.

10.00 New beams ready start run 10397
11.20 Further attempt to get rid of mm#62; JDAS patch changed D.C.
11.55 Beams dumped for refill
12:35 Short break started. RF cavity problem. 30 min ~ 60 min.
14:04 New filling ready. Start run # 10401.
14.20 Beams Lost.

16:00 Kanzaki and Hellenbrand on shift
16:30 PKR says that there will be no Lumi before 17^{00}
So we lowered magnet to 5000 A — Yamada replaces Kanzaki
17:00
19:30 Raised magnet to 7500 A
19:54 started RUN 10402
19:59 stopped RUN 10402, NORD50 BUSY
Restart N10, and started RUN 10403
↖ because instructions on d654 in front of colour TV did not work
message on teletype: INTERNAL DEVICE FOR N50 BATCH OCCUPIED
for NORD printout see the Run summary file for RUN NO. 10402
21:35 RUN 10404 stopped, IBM-ERROR
22:14 IBM TRANSFER ERROR, IBM linked again
22:37 beams lost, stopped RUN 10405

26/2/82 00^{00} Nozaki & Rowe on shift F⚽ot ball day!

00^{45} Injection begins after a 'kurze' unterbrechung
/e crate 11 is almost as tiresome as /e crate 8.
02^{20} Two successive I.D. trips. Our beam pipe voltage is 0.7 V. We have background
02^{27} optimisation now, when optimisation finished, our beam pipe V = 0.8 V !!

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 reg $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bid 2 $E_{sum} > 6$ GeV	T_2 Bid 17 $2T \cdot E_t \cdot 2\tau$

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26/2/82

12.54 "NSO Busy."
"Interval Device for NSO Batch occupied." message appears on the L.P.
We restarted NO 10. and NSO.

```
PLEASE NOTE THE FOLLOWING IN LOGBOOK
  IH =          129185
  NS =            4062
  IBSEC =           30
  IBTIM =           10
  L =       108836078
  IH2 =          7312
  IH3 =          8764
 NOW AN OC4 FOLLOWS
- MEMORY OUT OF RANGE  - AT: 120520 -
120520/ 17523160012      LDR   16, 0012, 12, 17
MEMORY OUT OF RANGE                      002442
LAST START ADDRESS:                      002442
LAST MEMORY REFERENCE ADDRESS: 00637545630
LAST DATA TO/FROM MEMORY:      20320160002
BREAKPOINT REGISTER 1 (BP):         077140
BREAKPOINT REGISTER 2 (BQ):         100000
BREAK CONDITIONS SET:
/ PARITY ERROR / STORE REFERENCE /
```

03.53 JDAS ERR. 44_8 SUB 203_8 — TOF.

03.15 IBM transfer error 54_8 SUB. 40000_8, ERR CNT 2_8 - Tried IBM link again → OK.

04.18 Pause run 10410 due to I.D. anode current trip.

04.53 " — — —

05.13 Repetition of 3 0'clock error.

05.41 JDAS ERR 463_8 SUB. 4024_8 · TOF2 wrong length · Branch 2, cr. 4.

06.40 JDAS ERR 53_8 SUB 140204_8

JDAS ERR 47_8 SUB ØØØØØØ Start pulse missing (from trigger box) or T2 crate offline. Pause run.

7.05 Magnet run down, MANUALLY (switch is still on manual) — the terminal would not ~~stop~~ respond.

The JDAS problem has not been solved yet (as far as I know — we got as far as reloading JDAS but before starting a new run we had to stop for energy saving.
∴ experts may have to be called at 9.00. Wait and see.

Rejection NSO	MIP	TOF	⟨L⟩ $\times 10^{30}$	$\int$ Ldt Run	$\int$ Ldt Exp	IBM TAPE	BP [V]	T2 Rej Ev. Fr (%)	Bhab.	MH	E_{beam}	Remarks

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8.00 M. Minowa + S. Komamiya
9.45 Magnet on Injection finished.
9.55 Start run. ZSEND has been configured again, to see how it behaves. D.C.
10.40 Nord 50 busy. no events
12.40 JDAS 63 sub 1510
IBM transfer error 54 sub 140000 err cnt 2
14.25 Latch 24, bits 1 & 2 contain the tagging signals SHT & SPZ (resp.) from now on (after run 10415) for test reasons. These bits have not been used previously. DC
14.45 Tagging Ettc adjusted
15.27.25 JDAS Error 44/504/7
15.58 JDAS ERROR 44/205/1
16.00 Glen'ming on shift (standing in for Ball 'till 5.15) - Takeda to come at 6pm.
16.30 Ball here earlier than anticipated. Sent off again!!!
Run down magnet → 500A.
16.50 Stop run 10418. Dump beam for energy saving.

19.36 New fill ready Magnet → 7500A. Start run 10419.
At run start get YPARA 18 : magnet not at nominal value; field = -321
error 22 at 1244 - false interrupt. level (dec) 12. idint code (oct) : 0
current (field) is OK, and has been for 5 mins.
19.50 TV reckons $L = 31 \times 10^{30}$! # Bhabha's looks reasonable for $\sim 10 \times 10^{30}$.
20.30 NORD hang-up. Everything dead & data-acquisition stopped.
reload NORD, re-start JDAS. To get colour TV back we have to do exit, esc, RT, etc again after the first re-load.
boards informed — but this is probably not a JDAS problem apparently
On starting run, formal run number was same as previous (10419). So stopped after 17 events + re-started.
Run 10420 in progress.

21.00 "NO TRIGGER" and IOX error at the same time.
PAUSE/CONTINUE did not help. → stop run.
Just after this trouble, beams were lost. (run 10421 was stopped after 1 event - not sent to IBM)
21.35 New fill ready, but BP ~4V. Ask for optimisation
21.42 Start run 10422.
22.50 " 10423

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0: rej $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 $E_T > 6$GeV	T_2 Bit 17 $2T.E_T.2\pi$

Rejection NSO	Rejection MIP	Rejection TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Expt	IBM TAPE ?	BP [V]	T2 Reject Evt Fraction (%)	# Bhabha	# Multi-hadron	E_{beam}	Remarks

RUN	DATE	START	STOP	I_+	I_-	DEAD TIME (%)	TIME (s)	RECORDS OUT	ALL TRIGGERS $\times 10^6$	T_0 REJECT $\times 10^6$	T_1 ACCEPT SUM	T_2 ACCEPT SUM	T_1 BIT 2 $E_T > 6$GeV	T_2 BIT 17 $2T.E_T.2\pi$	NSO	MIP	TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ RUN	$\int L dt$ EXPT.	IBM TAPE ?	BP [V]	T2 REJECT EVT FRACTION (%)	# BHABHA	# MULTI-HADRON	E_{BEAM}	REMARKS
10420	26 2 82	20:43	20:58	8.8	8.7	10.4	868	1656	226	23.5	682	1899	266	526	ON	ON	ON	8.45	7.33	3977.93	IBM	07	56	101	2	17,300	Beams lost
10421	"	only 1 event then beams lost, event not sent to IBM.																									
10422	"	21:43	22:50	9.2	9.3	9.1	3990	8002	1038	94.9	3190	9668	1180	2644	ON	ON	ON	9.12	36.40	4014.33	IBM	0.85	58	425	12	17,300	
10423	"	22:50	0:02	7.6	7.8	8.2	4259	8002	1109	90.6	3142	9486	1206	2245	ON	ON	ON	8.08	34.40	4048.73	IBM	0.80	57	415	13	17.300	
10424	27.2.82	0:02	0:42	6.9	7.1	7.5	2359	3866	614	459	1537	4573	566	984	ON	ON	ON	6.90	16.27	4065.00	IBM	0.67	58	187	2	17.300	Beams dumped.
10425	"	1:40	2:47	9.3	9.6	8.3	4034	8002	1050	87.3	2888	9167	1039	2291	ON	ON	ON	7.85	31.65	4096.65	IBM	0.88	52	366	7	17.300	
10426	"	2:48	2:57	9.0	9.4	8.9	547	1064	142	12.6	377	1285	134	336	ON	ON	ON	7.57	4.14	4100.79	IBM	0.72	54	44	1	"	
10427	"	3:00	4:06	7.7	8.0	8.6	3968	7452	1033	88.3	2735	9600	1012	2942	ON	ON	ON	6.83	27.12	4127.91	IBM	0.70	59	322	8	"	Beams dumped.
10429	"	6.16	6:37	11.6	10.3	8.8	1201	2679	312	27.3	936	2739	354	750	ON	ON	ON	9.50	11.41	4139.32	IBM	0.87	45	136	3	"	no run #10428
10430	"	6:45	7:06	10.2	9.6	12.7	1236	2810	322	408	847	3083	293	947	"	"	"	7.03	8.68	4148.00	IBM	0.73	47	100	1	"	
10431	"	7:11	7:32	9.6	9.0	7.6	1259	2430	327	24.9	874	2590	323	579	"	"	"	7.31	9.20	4157.20	"	0.70	48	123	6	"	
10432	"	7:44	7:56	9.1	8.5	9.6	724	1140	189	18.1	459	1347	167	292	"	"	"	6.86	4.97	4162.17	"	0.64	57	56	1	"	
10433	27/2/82	8:02	8:46	8.1	7.6	6.1	2666	4301	694	424	1668	4807	625	867	ON	ON	ON	6.51	17.35	4179.52	IBM		53	205	10	17,300	Beams dumped.
10434	27/2/82	9.53		11.22	11.11	8.2	1064	2115	276	22.8	843	2393	304	623	ON	ON	ON	9.80	10.43	4189.95	IBM in the crate NOWHERE!	0.86	55	119	3	17.300	stopped prematurely, because of IBM error
10435	Run empty and completely lost due to IBM link problem - it only contained 5 pedestal events anyway																				TAPE ≡ subsequently nowhere.						Rejected as JUNK.
10436																					TAPE ≡ — ditto —						Rejected as JUNK.
10437	JUNK — MIPROC was OFF																				F11093 TAPE	0.66	54	200	5	17.300	A good run again. **TAPE**
10438	JUNK — abandoned due to ONLINE problems																				F11093 TAPE	0.62	55	131	4	17,300	**TAPE**
10439	27/2/82	10.33	11.25	8.9	8.9	7.7	2956	4876	769	58.8	1773	5856	638	1340	ON	ON	ON	5.65	16.70	4206.65	TAPE	0.60	54	57	3	17.300	Beams dumped.
10440	"	11,28	12.02	8.19	8,22	6.4	2017	2998 (1077)	525	33.4	1111	3649	205	709	ON	ON	ON	5.15	10,39	4217.04	IBM	0.60	54	57	3	17.300	Beams dumped.
10441	27/2/82	12.03	12.16	7.65	7.69	6.5	756	~~127~~	197	12.8	384	1307	74	271	ON	ON	ON	5.07	3,83	4220,87	IBM	,85	59	225	10	17.300	TOF µP off Beams lost.
10442	"	13.23	14.12	9.7	9.9	9.1	2418	4945	629	57	1901	6104	673	1747	ON	ON	OFF	7.87	19.02	4239.89	IBM	1,05!	54	396	7	17.300	TOF µP off
10443	"	15:01	16:12	8.4	8.4	9.1	4027	8002	1048	96	3023	9293	1102	2455	ON	ON	OFF	8.24	33.18	4273.07	IBM	0.66	52	423	16	17.300	TOF µP off } for B.N.
10444	"	16:12	17:33	7.0	6.9	6.0	4798	8002	1249	75	3112	8898	1157	~~1751~~ 1751	ON	ON	OFF	7.28	34.91	4307.98	"	0.54	57	90	7	"	TOF µP off } beams dumped
10445	"	17:36	18:02	6.5	6.5	5.5	1395	1950	363	20	748	2434	262	477	ON	ON	OFF	6.06	8.45	4316.43	"	0.54	57	90	7	"	
10446	"	18:29	19:21	11.12	11.46	8.6	3151	6963	820	71	2655	497	999	1763	ON	ON	ON	9.81	30.91	4347.34	"	0.9	49	376	16	17.300	
10447	"	20:08	21:33	6.9	7.3	6.3	5091	7928	1324	83	3213	503	1221	1863	ON	ON	ON	6.88	35.01	4382.35	"	0.66	56	434	16	"	
10448	"	21:34	21:48	6.6	7.0	5.6	828	~~1197~~	215	12	488	84	170	231	ON	ON	ON	6.60	5.46	4387.81	"	0.55	57	56	1	"	beams dumped
10449	"	22:12	23:35	11.2	11.7	7.2	4810	8002	1252	80	3105	9681	1179	2168	ON	ON	ON	6.83	32.86	4420.67	"	0.91	57	374	15	17.300	
10450	28/2/82	00 57	2 12	8.9	9.0	7.9	4443	8002	1155	91	3077	9633	1149	2254	ON	ON	ON	5.98	7.14	4427.81	"	0.61	55	78	1	"	
10451	"	2 12	2 52	8.1	8.3	6.6	2374	3637	618	41	1401	2160	505	916	ON	ON	ON	7.61	33.83	4461.64	"	0.75	57	425	9	"	
10452	"	3 06	4 15	6.8	7.0	5.5	4118	5640	1071	59	2187	3340	802	1214	ON	ON	ON	5.94	14.11	4475.75	"	0.7	57	161	3	"	I.D. trip.
10453	"	4:57	6 19	8.7	8.9	7.9	4501	8002	1171	92	3221	9617	1207	2276	ON	ON	ON	5.43	22.37	4498.12	"	0.6	58	256	9	"	Beams dumped
10454	"	6:20	7:49	7.1	7.4	6.1	5230	8002	1361	83	3081	9597	1167	1912	ON	ON	ON	7.77	34.99	4535.11	"	0.9	58	394	12	"	
10455	"	07:50	08:17	6.7	7.0	5.5	1622	2218	422	23	869	2759	329	490	ON	ON	ON	5.99	31.31	4564.42	"	0.6	57	391	18	"	
															"	"	"	5.47	8.88	4573.30	"	0.5	59	109	2	"	Beams dumped
																							1570+223 = 1793			

Run	Date	Start	Stop	at Run start I+	at Run start I−	DT (%)	Time (s)	Rec out	All ×10⁶	To: reg ×10⁶	T1 ACC Sum	T2 ACC Sum	T1 Bid 2 E_T>6GeV	T2 Bid 17 2T·E_T·2τ

82 27.2.82

0⁰⁰ J. Kanzaki and H. Riesberg on shift.

0²⁰ Visit of P. Dittmann. He asks to make a N50 diagnosis (as indicated below the colour TV) at the end of the shift.

0⁴⁰ Beams dumped.

1³⁵ New fill ready RUN 10425 starts.

1⁴² JDAS 44/602/1.

2⁰² " 44/302/1.

2²⁵ " 44/303/1

2⁵⁴ IBM transfer error 54 / 140000. LINK again. → O.K.

3³⁰ JDAS 44/203/1.

3⁴² " "

3⁵⁴ " 44/205/1.

During Run 10425 we get problems with DL8 # 152 : wires # 1220-23 missing, events go into wires # 1216-19. (The DL8 is in Crate 2 of branch 6 ~~where~~ we observed several time outs)
Stop Run 10426, DL8 out and in again : Fault disappears for the moment.

But in R 10427 gaps in the timing maps show up. So we decide to exchange the DL8 during the next filling

4²⁶ Beams dumped.

5⁵⁰ New filling ready, but beams lost in the first second (!) of the Run # 10428
0 events to IBM

6¹⁵ New filling ready. Start Run 10429

6²⁶ JDAS error 61/1753/1.

7¹¹ " 44/602/1

7⁴⁷ " 61/1024 & 61/2011

7⁵² " 44/602 × 4 [redacted].

7

DL8 # 152 (wires 1216-1223) story continued. Between ~~During~~ Runs 10429 and ~~through~~ 10433 I made different modifications which produced always other errors. Finally, after having exchanged DL8 # 152 and 151, it loads ok in Run 10433.

8.00 27/2/82 Heuer/Pesce

8.46 Beams dumped. Run 10433 terminated.

9.53 New fill ready. Start run 10434.

10.13 IBM error 53 - IBM Busy for about 5 min. Since [redacted] we have managed to keep the event display, we take the opportunity to ~~stop~~ end the run and restart JDAS. On Carlo's suggestion we restart the Nord since something seems to be overwritten.

10.30 We continue and write on tape since computer between IBM and us seem to be dead. No link, no PETRA telegram. All expts have no connection to the IBM

Rejection NSO	MIP	TOF	⟨L⟩ ×10³⁰	∫Ldt Run	∫Ldt Exp	IBM TAPE	BP [V]	T2 Rej. Fr. (%)	Bhab.	MH	E_{beam}	Remarks

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JDAS-error 51 subcode 165 task 2

11¹⁶ IBM link is still down. Experts have to be called in to investigate the problem. Meanwhile we continue writing to tape.

11²⁵ Display hangs again. Restart NORD and start a new run.

11³⁴ Muon crate 8 has been missing regularly throughout the shift. It just went permanently missing so we had to manually reset it — all OK now.

11⁴⁴ JDAS error 63 Subcode 1121 task 1

12⁰⁰ IBM-link up again → start new run to IBM
Start run 10444. Standard Histograms for 10439 checked and all OK.

12¹⁶ Beams dumped for refill.

12⁰⁰ On special request of D.N. Switch off the TOF-μproc. It should be switched off during the whole next filling.

13⁵⁰ Background jumps as Switch off the chamber

13⁵⁷ On again

13⁵⁷ Off " ; terrible high bg

14⁰⁰ on again

14¹⁰ beams lost

15⁰⁰ Short new run (TOF μproc still off). Rather high bg (BP 1.05), but stable. Chamber bg o.k., ~~not~~ dead time 10%

16⁰⁰ Matsumura & Wasning on shift

16³⁰ check histograms for run 10443, seem OK.

17⁴⁵ JDAS Error 58 / 550 / 1

18⁰⁰ beams dumped
TOF-μproc switched on again

18²⁵ new fill ready
ID wires #108-111 still low in wire maps, pin cleaning did not cure it, we have to exchange it.

18⁵⁴ JDAS Error 63 - 1136 - 1 : wrong length of TOF bank

19²¹ run 10445 stopped to study DL8 problem and to allow D. Cords to make some changes to the TOF μproc readout

20:08 Tests finished : DL8 problems solved by replacing DC8's 11, 12, 13, 14
TOF problem needs further studies

21.21 JDAS Error 63 - 1331 - 1 : wrong length of TOF bank

21.22 muon digitizer 19 missing, may be low statistics, so we ignore it

22.19 ID anode alarm due to background optimization. Large fraction of beams lost

23.59 End of day.

Run	Date	Start	Stop	I+ at Run start	I− at Run start	DT (%)	Time (s)	Rec out	All ×10⁶	To: reg ×10⁶	T1 ACC Sum	T2 ACC Sum	T1 Bid 2 E_T > 6 GeV	T2 Bid 17 2T · E_T · 2π

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00⁰⁰ 28/2/82. Allison, Yamada on shift.
00⁵⁴ Beams. Beam pipe current v. large. OK at 0.9.
00⁵⁶ Run 10450 started. μ crates 8 & 11 missing occasionally.
01²² JDAS ERROR 44 SUBERROR 205 TASK 1. — Timeout branch 2 crate 5. (Leadglass).
FAULTY PART 11 (It did not say of WHAT)
02⁰⁹ JDAS ERROR 44-703-1 : DL8 time-out.
02¹⁰ Run 10451 started
02²³ JDAS ERROR 44-203-1 : Time out - leadglass.
02³⁰ " " 44-703-1 : DL8's again.
02⁴⁶ " " 64-4521-1 : AC2099 (TOF μproc?) TOF2 error, Q,X missing, station 45, subaddr 21.
Also on printer: ERROR 37; IOX error, address 111774, level 8₁₀ (What = that?).
2⁵⁰ I.D. trip. Reloaded AC2099.
3⁰⁵ Run 10452 started.
4⁵⁷ " 10453 " . μ crates 8 & 11 missing with considerable regularity, ~5% of events!
5¹⁶ I.D trip.
5²² JDAS ERROR 44-205-1.
5¹³ I.D trip (twice). Beam was fluctuating. PKR aware of it but did not know the cause. It is steady now after small adjustment.
7¹¹ I.D trip.
7⁴⁵ IBM Transfer error. 54. 140000

replacing ☹
08:00 Heuer & Watanabe on shift
08:17 beams dumped
09:08 beams ready.
09:28 Online rejection factor displayed on TV screen went up to 98.8% for INST, TOT is about 40%. Heuer finds a note in p40 of this book, which says that everything is OK as long as the counts of N10, N50 and IBM increase. So everything must be OK.
09:32 INST rejection went back to normal.
09:34 Jetch. High current. BP ~ 2.5 V. Turn off Jet ch. HV
35 BP back to 0.7 V.
Then on the PETRA screen, "Background optimization" appears. BP ~ 0.7 V, but suddenly went up. Pause run 10456, turned off Jet ch HV again.
40 Back to luminosity run. BP fluctuates between 0.7 and 0.8 V.
Continue run. BP is stable at 0.68 V.
43 ID trip. BP jumped up >1 V, and back to 0.8 V.
+Nord hang up. Data lamps on: #9, #13, flickering: #12, in coincidence with #13 at the Nord 50 at N10

Rejection NSO	MIP	TOF	⟨L⟩ ×10³⁰	∫Ldt Run	∫Ldt Exp	IBM TAPE	BP [V]	T2 Rej. Fr (%) Ev.	Bhab.	MH	E_{beam}	Remarks

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After reloading the Nord, the last run number is 10455 on the TV-screen, should be 10456.
Set run-number via SET-EXP.
Heuer notes that this instability of the beams occurs at about the same time after the fill for all the fills displayed on the PETRA TV screen. (or about the same beam currents)
10:05 JDAS errors 61-2415-1 and 61-1164-1
10:30 Std-histograms ok
11:03 JDAS error 63-7776-1
12:00 Time out at 203 Task 1.
12:22 Beams dumped.
12:50 Beams ready. Start 10459.
JDAS error 44. sub error 703 task 1.
13:00 Pause run. PETRA screen says "Background optimization". Turn off Jet ch. HV.
BP ~ 0.8 V, but occasionally jumps up.
13:10 According to PKR, beams loss was rather large for this fill, and only way to save the beams is to separate the beams for a while and then bring back again. So no beams are colliding while "Background optimization" is displayed. !
Now back to luminosity run.
13:15 JDAS error 61 at 1243 task 1. (TOF1 wrong length.)
13:44 " 63 7434
14:45 Std. histograms ok
14:50 JDAS 44-703-1 (time out TOF)
15:04 JDAS 63-2566 task 1.
16:00 " 63-1420 " McCann & Ditmann on shift
16:32 ID trip due to 'BACKGROUND OPT.'
17:56 7× JDAS ERROR 61 (63) suberror ≥ 1200
18:20 2× JDAS ERROR 44 Suberror 703
19:04 9× JDAS ERROR 61/63 Suberror ≥ 1377 } — First suberror not noted. See below.
19:15 3× " " " " " 1406 } First suberror, in each case, was
19:19 3× " " " " " ≥ 362 } 177777; but now overwriting the batch of 9 errors at 19:04, so can't see first one at that time.
20:15 Beams dumped
20:15 — no electrons, synchrotron problems.
24:00 FF kH on shift 01-03-82
1:00 JDAS error 67 and 63 several times, cures by itself
suberrors 7607, 7774, 7465, 4000, 4057, 7754, 4057, 177777,
1:08 I-D trip due to beam fluctuation.

Run	Date	Start	Stop	at Run start I+	at Run start I-	DT (%)	Time (s)	Rec out	All T_0 $\times 10^6$	T_0 rej $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 $E_4 > 6$ GeV	T_2 Bit 17 $2T \cdot E_4 \cdot 2T_1$
10456	28/2/82	09:09	~09:48					3373						
10457	28/2/82	9:51	11:12	7.6	7.8	6.6	4838	8002	1259	82.6	3240	9170	1282	1911
10458	"	11:12	12:23	6.5	6.7	5.6	4207	5996	1095	61	2434	7053	892	1309
10459	"	12:50	14:09	8.8	9.3	9.0	4124	8002	1073	96.1	3252	9215	1247	2342
10460	"	14:10	15:30	7.2	7.7	6.8	4792	8002	1247	84.3	3193	9432	1238	1912
10461	"	15:30	16:02	6.7	7.2	5.8	1889	2805	491	28.5	1102	3816	422	594
10462	"	16:37	17:24	9.6	9.9	8.5	2141	4225	557	47	1725	4752	671	1077
10463	"	17:35	18:50	7.7	8.0	7.3	4542	8002	1182	86.3	3115	9355	1167	1906
10464	"	18:50	20:14	6.3	6.6	6.7	4993	8002	1299	86.7	2989	9729	1149	1984
10465	"	20:15	20:17	6.3	6.6	8.1	88	140						
10466	~~2/3~~/82	00:32	01:37	8.9	9.2	9.7	3382	7411	880	85.6	3064	8374	1179	2173
10467	1/3/82	1:39	1:44	8.7	9.1	7.9	226	481	58	4.6	191	500	64	136
10468	1/3/82	02:19	03:36	8.6	9.2	9.2	3813	8002	992	92.3	3374	9110	1306	2230
10469	1/3/82	03:39	4:19	7.5	8.1	8.1	2530	4689	659	53.6	1797	5540	664	1796
10470	1/3/82	04:25	05:29	7.5	8.1	6.5	3743	5993	975	63.3	2314	7187	839	1395
10471														
10472	1/3/82	07:00	07:10	9.2	9.6	7.2	415	788	108	8.0	303	876	104	201
10473	1.3.82	9:18	10:15	11.3	11.6	10.4	3347	6847	871	90.9	2794	7945	1024	2247
10474	"	11:58	13:09	9.9	10.1	8.1	4285	8002	1115	90.6	3117	9376	1183	2228
10475	"	13:09	14:15	8.0	8.3	6.8	3928	6468	1025	69.4	2460	7870	957	1664
10476	"	16:43	17:40	11.44	11.72	9.4	2415	4962	628	59	2077	5529	785	1552
10477	1/3/82	17.41	18:36	9.09	9.58	7.9	~3300	6077						
10478	"	18.40	19:30	7.70	8.29	7.1	2968	5158	772	55	1911	6133	718	1312
10479	"	20.19	20.45	11.46	11.04	9.1	1509	3219	393	35.9	1291	3638	475	930
10480	"	22:06	23:16	11.70	10.49	8.0	4130	8002	1075	86.5	3332	8781	1291	2059
10481	"	23:16	0:31	9.67	8.68	8.3	4154	8002	1080	90.2	3021	9676	1204	2551
10482	2/3/82	0:31	1:31	7.19	7.99	9.8	3591	7403	935	91.5	2307	10267	872	3424
10483	— no	event	—											
10484	2/3/82	2:31	3:47	11.01	11.45	8.3	4191	8002	1090	90.7	2988	10004	1126	2687
10485	"	3:48	4:32	6.67	7.07	7.2	2636	4453	686	50.0	1591	5796	589	~~6478~~/445
10486	"	5:24	6:21	11.2	11.39	8.8	2746	5577	714	62.8	2207	6370	823	1516
10487	5.3.82	6:52	8:49	0	0	1.9	7021	8002						
10488	"	8:53	9:08	0	0	1.8	921	1051						
10489	"	13.17	13:44				1638	1862						
10490		13.49	13:59				lost	~0						

Rejection NSO	Rejection MIP	Rejection TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T2 Rej. Ev Fr (%)	Bhab.	MH	E_{beam}	Remarks
											17.300	Run-Summary for Y. NORD Hang.
ON	ON	ON		14.7	4588.00	IBM	0.9					
ON	ON	ON	7.76	37.57	4625.54	IBM	.65	57	482	19	17.300	
ON	ON	ON	6.23	26.19	4651.73	IBM	.55	57	314	10	"	
ON	ON	ON	9.38	38.68	4690.41	IBM	0.9	58	447	13	17.300	
ON	ON	ON	7.27	34.84	4725.25	IBM	.7	58	428	13	"	
ON	ON	ON	6.36	12.01	4737.26	IBM	.57	57	147	8	"	
"	"	"	8.41	20.14	4757.40	"	.8	57	254	8	"	
"	"	"	7.63	34.67	4802.07	"	—	57	398	18	"	
"	"	"	6.27	31.28	4833.35	"	0.62	57	397	18	"	
"	"	"	6.14	0.54	4833.89	"	0.55	58	8	0	"	Every 0.5 sec counts !
ON	ON	ON	10.30	34.83	4868.72	IBM	0.85	~~57~~ 54	424	16	17.300	
"	"	"	8.86	2.00	4870.72	"	0.80	54	27	2	"	beams lost
"	"	"	9.73	37.10	4907.82	"	0.80	57	487	14	"	
"	"	"	7.81	19.75	4927.57	"	0.72	57	207	2	"	
"	"	"	6.35	23.76	4951.33	"	0.65	56	292	5	"	beam dumped.
												No run summary - see logbook.
"	"	"	6.69	2.78	4954.11	"	0.75	55	35	0	"	
"	"	"	9.57	32.03	4986.14	"	.75	57	365	13	"	beam lost
"	"	"	8.56	36.68	5022.82	"	0.70	57	435	21	"	
"	"	"	6.84	26.95	5039.77	"	0.7	57%	345	8	"	beams dumped
ON	ON	ON	9.77	23.58	5063.35	IBM	0.38 (22)!	58%	297	8	17.300	BP crate missing.
ON	ON	ON	8.61	27.13	5090.48	IBM	0.65				17.300	Good complete detector again
ON	ON	ON	7.14	21.20	5111.68	IBM	0.62	57%	258	10	17.300	Beamsdumped.
ON	ON	ON	10.31	15.55	5127.23	IBM	1.2	57	182	9	17.300	beams lost
ON	ON	ON	9.27	38.30	5165.53	IBM	0.80	55	483	23	17.300	
ON	ON	ON	7.65	31.78	5197.31	"	0.70	57	406	19	"	
ON	ON	ON	6.43	23.08	5220.39	"	0.75	58	250	18	"	beams dumped
							0.9					
ON	ON	ON	8.00	33.51	5253.90	IBM	0.84	~~58~~ 58	373	14	17.300	
ON	ON	ON	6.07	16.00	5269.90	"	0.62	58	205	3	"	beam dumped
"	"	"	8.96	24.60	5294.50	"	0.9	57	304	7	"	beam lost
						Tape F11 104						Cosmic, B=0
						F11 221						" "
						F11 144						Cosmic, B=0
						"			1793+294=	2087		

Run	Date	Start	Stop	I_+ at Run start	I_- at Run start	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 reg $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bid 2 $E_\Sigma > 6$ GeV	T_2 Bid 17 $2T \cdot E_\Sigma \cdot 2\pi$	Rejection NSO	MIP	TOF	$\langle L \rangle$ $\times 10^{30}$	$\int$ Ldt Run	$\int$ Ldt Exp	IBM TAPE	BP [V]	T2 Rej. Fr (%)	Bhab.	MH	E_{beam}	Remarks

1/3/82

7:30 IOX Error and "No triggers"
stopped RUN 10466 and started next one
7:34 beams lost
02:18 New fill - start run 10468.
02:31 I-D Trip. — the usual instability strikes again.
02:40 Restart.
3:12 IBM transfer Error 54 suberror 740000_8
IBM linked again
3:44 JDAS Error 61 and 63 several times during RUN 10469
4:20 IBM Error 53 "Try IBM link again" did not work
stopped RUN 10469 and started new one, this worked
5:15 Std histograms checked o.k.
05.27 to I-D trip — beam dumped just before signal from PKR.
06.16 New fill established. Run 10471 started
06 46 Beam fluctuations + we decide to turn off I-D BUT run will not PAUSE - NORD hang-up.
~~10477~~ NORD Hang up at event ≈3200 of RUN 10477 this RUN was not terminated!
the Runsummary was lost
Novel reloaded
Next RUN started, but no increasing Runnumber, so there are two RUNs with Nr 10471?
RUN stopped after 768 events (Suddenly it 29/2/82 again!)
07 02 ID Trip. PAUSE
07 01 Beams lost - ID Trip STOP Run.
07 10 PKR says they have problem - beam dumped due to some emergency trip

8:00 Dall & Cook on shift
9:15 new filling
9:20 JDAS error 46 subror 0 task 1
10:14 beams lost. ID trip. anode and chain currents alarms. Looks like a power supplying failure in PETRA, since magnets are off. Run 10473 stopped.
11:24 New filling ready, but can't switch magnets on after the trip. K informed
the ID down-anode alarm register shows a 6V (UV3C) trip also, so inform Riesberg
11:50 Magnet now OK.
12:29 JDAS error 44 suber 703
13:09 End of run 10474. Start run 10476
1400 PLUTO wants a new filling at 1415 and tells us that JADE is coordinating. How interesting!?

14:20 Attempts to refill have degenerated into a 'short break'
15:16 --- has machine studies.
Fixed problem with pr structs 10,11,12,13 (T3 trigger). Rate should not change.
What was it, please?

16:00 G. Pearce and H. Rieseberg
"Machine studies" sign goes away and injection starts

16:42 New fill ready, BP only 0.36 V, chamber current is also low
Run # 10476 started
Problem with Trigger 1 input - ½ of B.P. missing - explains low BP current!.
Crate found without power - fuse broken. Cathode will run until it can be replaced.
17:15 PKR are suddenly optimising the background - I wish they'd at least told us! Power down sets while they do this.
17:40 B.I. crate eventually powered up again - had to replace the power pack. End run 10477 and start run 10478.
18:36 Run 10477 terminated by Nord hang-up
N10 Level 9 and 13, 12 flashing, Seq board dead, no messages
Forced to restart NORD
19:30 Beams dumped. $L \sim 665 \times 10^{30}$.
DL8 # 117 (wires 936-943) and DL8 # 143 (wires 1144-1151) replaced to study at this units the bit and jump problems at Heidelberg.
20:15 New fill ready
Start Run 10479.
20:45 beams lost
22:05 New fill ready, Run 10480 started. No beam instability at 10 mA in this fill. Current are more than 1 mA different.
23:16 Run 10481 started

2/3/82

0:00 Glendinning and Komamiya

7:00 We announced that new filling at 1:30
1:30 Beams dumped.
2:55 Inner chamber tripped
2:58 " " due to Beams lost (11 mA → 8 mA)
4:20 Beam dumped for new filling
5:50 Inner chamber tripped.
5:55 Back ground optimization
6:10 ID High Voltage display shows funny shape (must be broken) horizontal gain

Run	Date	Start	Stop	I+ at Run start	I− at Run start	DT (%)	Time (s)	Rec out	All ×10⁶	To: reg ×10⁶	T1 ACC Sum	T2 ACC Sum	T1 Bit 2 $E_\gamma > 6$ GeV	T2 Bit 17 $2T \cdot E_\gamma \cdot 2\pi r$

2/3/82

06:45 Petra TV says 'Machine studies'
06:55 Run down our magnet.
8:10 Run 10487, a test run, was started.
8:50 " " stopped.
14.00 Magnet switched off (Matsumura)

---

5. March 1982

Now ends a three-days period which was devoted to beam polarization studies of the machine groups.
We will resume data taking at $E_{beam} = 17.3$ GeV

First we take B=0 cosmics.

After having had some troubles with "blocked" terminal 9 I start at

6^{52} Run 10487 COSMIC B=0 Rate ≈ 1.1 Hz
At start error message on ND teletype : ERROR 22 at 1245, False interrupt, level 12, ident code 0

8:00 ~~H. Hiroura~~ replaced by Y. Watanabe and H. Riesberg on shift
9:08 End of Cosmics, switch on magnet. Now, at full value
10:34 ~~PKR almost succeeded in getting a fill ready and lost it.~~
11:30 Now they have stopped to inject. Septum magnet of Pluto has a water leak.
12.00 We had ~~lost~~ calls for PETRA and PLUTO. There seems to be some turbulence there. They cannot say how long it will take.
We run down our magnet to 500 A;
12:20 Start injecting. Solenoid 7500A.
12:30 Now beams in PETRA, but PETRA TV is blacked out. They also lost beams.
12:45 "Short break" It is not a magnet of Pluto but a PETRA magnet near to Pluto which gave and gives now again a problem. PKR says that it will last not long to repair.
13:15 Start a Cosmic Run with B=0
13:50 Start getting Time out error from 603. Stop 10489. Being investigated
14:00 PKR start injecting. Magnet again 7500A.
15:12 Two beams of 12 mA each lost at 17.275 Gev! (This morning Mr. Krelbiel brought a book: Murphy's Law and other reasons why things go wrong!)

Rejection NSO	MIP	TOF	⟨L⟩ ×10³⁰	∫Ldt Run	∫Ldt Exp	IBM TAPE	BP [V]	T2 Rej Ev. Fr (%)	Bhab.	MH	E_{beam}	Remarks

16:00 Duevdoth, Konziki
17:00 New fill ready. But couldn't start data taking because of 'MIPROC No RESPONCE'
17:05 ID trip. — SPARK Alarm. In order to reset it we called experts.
~~17:15~~ Dittmann comes and reloads MIPROC. → MIPROC O.K.
17:10 Heidelberg people reset the alarm.
17:23 Run 10492 starts.
Before 18.00 Tests on New neutral Trigger based on Barrel Septants
18.00 - Septant Threshold raised to 225 MeV
18:00 Run 10493 starts.
18:05 Trigger rate is low. ≈ 1.4 Mr. Krehbiel noticed one of the power supplies for Lead Glass system was OFF. → Trigger rate is about 3. now.
We still get missing Muon Crate 8 flashing up. (a bas often, 11).

```
TRIGGER HARDWARE STATUS
=======================
LAST UPDATE: KREHBIEL,05/3/82

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

     BG          0.080 GEV

     EQ          0.050

     BS          0.150


   T1 ACCEPT                    |   BIT   COND.
BIT   COND.                     |-------------------------------
-------------------------------|    9   EC1[2] * EC2[2]
 1   LUMI                      |   10   ( EC1+EC2 )[3] * B[4]
 2   EC[1]                     |   11   TAGG * B[3]
 3   TAGG * E[3]               |   12   B[2]
 4   FMMU OFF!                 |   13   EC1[4]*EC2[4]*EC[2]
 5   EMPTY                     |   14   SEPT4 * <5T
                               |   16   RANDOM CA 0.01 HZ
-------------------------------|

OTHER BITS NOT USED AT THE MOMENT

   T1 POSTPONE                  T2-COND.  |  BIT   COND.              T2-COND.
BIT   COND.                               |-------------------------------------
-------------------------------------------|  25   1TBG * B[4]      ) 1TR-FST
17   2T * E[4]                )           |  26   NOT USED
18   TAGG * 2TBG              ) 2TR-ALL   |  27   NOT USED
19   (EC1+EC2)[2]*2T  OFF!    )           |  28   NOT USED
20   2TBG-NS * <7T            ) 2TR-ALL   |  29   T-COL[3] * <5T   )
21   NOT USED                             |  29   T-COL[1] * <7T   ) TR-FST-COL
22   NOT USED                             |  30   T-COL[1] * <7T   )
23   NOT USED                             |  31   TBG-COL[2]       )
24   FMMU[6] * (3TR-ID + 1MU-FWD)         |  32   NOT USED
-------------------------------------------|-------------------------------------
```

Now, on since Run 10493

Run	Date	Start	Stop	at Run start I+	at Run start I−	DT (%)	Time (s)	Rec out	All ×10⁶	To reg ×10⁶	T1 ACC Sum	T2 ACC Sum	T1 Bit 2 E1>6GeV	T2 Bit 17 2T·E4·2tr	Rejection NSO	Rejection MIP	Rejection TOF	⟨L⟩ ×10³⁰	∫Ldt Run	∫Ldt Exp	IBM TAPE	BP [V]	T2 Rej. Ev. Fr (%)	Bhabh.	MH	E beam	Remarks
92																											93
RUN	DATE	START	STOP	I+	I−	DEAD TIME (%)	TIME (SEC)	RECORD OUT	All To ×10⁶	To REJ ×10⁶	T1 ACC SUM	T2 ACC SUM	T1 bit 2 E1>6GeV	T2 bit 17 2T·E4·2tr	REJECTION NSO	REJECTION MIP	REJECTION TOF	⟨L⟩ ×10³⁰	∫Ldt RUN	∫Ldt EXP	IBM or TAPE	BP (V)	T2 REJ. EV FR (%)	BHABHA	MULTI HADRON	E BEAM	REMARKS.
10492	5/3/82	17:23	17:38	8.9	9.3	21.6	617	1270	161	34.6	460	1682	118	820	ON	ON	ON	5.71	3.52	5248.02	IBM	-75.	63	36	0	17.300	
10493	"	18:01	19:23	7.3	7.7	6.9	4891	8002	1273	87.3	3058	9767	1126	2359	"	"	"	6.54	32.00	5330.02	"	0.68	56	362	12	"	trigger bit 14 ("Olsson trigger")
10494	"	19:23	20:42	6.2	6.5	5.8	4699	6801	1223	71.1	2749	8147	1006	1663	"	"	"	5.81	27.28	5357.30	"	0.55	57	348	11	"	on since Run 10493 Beams Dumped
10495	"	21:33	22:31	7.7	7.2	7.7	2771	4699	721	55.9	1810	5532	645	1390	"	"	"	6.59	18.25	5375.55	"	~~0.50~~	56	216	8	"	
10496	"	22:35	22:52	4.2	2.0	5.6	972	1446	253	14.2	598	1635	206	332	"	"	"	6.15	5.98	5381.53	"	0.50	56	78	1	"	Beams lost
10497	"	23:23	23:39	10.4	11.1	8.3	874	1723	228	19.0	658	1979	254	517	"	"	"	8.15	7.12	5388.65	"		57	89	2	"	
10498		23:46	23:51	10.1	10.7	8.5	248	575	65	5.5	226	587	82	192	"	"	"	8.80	2.18	5390.83	"		51	22	0	"	
10499	6/3/82	23:58	0:52	8.6	9.1	7.5	2796	4320	623	46.7	1703	5038	590	1222	"	"	"	7.98	19.12	5409.95	"	0.70	57	190	6	"	Takeda checks out LG power supply.
10500															∫"	∫"	∫"	7.53	4.00	5413.95	∫"	0.60	∫55.	∫44	∫1	∫"	↓ flower supply for LG giving trouble
10501	"	0:59	1:11	8.2	8.7	7.3	531	974	138	10.0	359	~~1114~~	135	285								0.60					Beams Dumped
10502	"	1:41	3:02	6.4	6.8	8.1	4666	6751	1214	98.1	2756	~~7882~~	963	1612	"	"	"	6.00	28.01	5441.96	"	0.50	56	304	9	"	Nord 50 busy.
10503	"	5:04	5:39	8.5	8.6	9.3	1476	2704	384	35.8	1054	3263	351	899	"	"	"	7.33	10.82	5452.78	"	0.60	58	130	2	"	" " "
10504	"	5:47	6:14	7.9	8.0	6.9	1590	2738	414	28.4	1093	3264	401	784	"	"	"	7.27	11.55	5464.33	"	0.55	57	167	4	"	"
10505	"	6:20	6:38	7.5	7.5	6.3	1035	1681	269	16.9	667	1954	234	436	"	"	"	7.05	7.30	5471.63	"	0.51	55	97	2	"	"
10506	"	6:41	8:11	6.1	6.2	5.8	5441	8002	1416	81	3105	9721	1084	1990	"	"	"	6.02	32.78	5504.41	"	0.57	56	372	11	"	
10507	"	8:12	8:33	5.9	5.9	5.2	1223	1641	318	16.4	656	1894	222	324	"	"	"	5.40	6.60	5511.01	"	0.5	55	90	1	"	
10508	"	9:21	10:30	8.7	9.5	13.5	4164	8002	1084	147	2907	10131	1078	2869	"	"	"	7.23	30.12	5541.13	"	1.0	58	381	12	"	
10509	"	10:31	11:59	7.1	7.8	10.4	5262	8002	1369	142	3215	9390	1156	1997	"	"	"	6.34	33.36	5574.49	"	0.5	57	390	13	"	
10510	"	12:00	13:20	5.9	6.6	5.1	4788	6366	1249	64	2535	7645	906	1365	"	"	"	5.11	24.50	5598.99	"		57	297	11	"	
10511	"	15:39	16:55	8.2	8.2	8.1	4575	8002	1191	96.1	3039	10032	1109	2484	"	"	"	6.80	31.09	5630.08	"	1.1	58	381	4	"	
10512	"	16:56	18:27	6.7	6.7	6.2	5443	8002	1415	87.6	3121	9763	1117	9697	"	"	"	5.83	31.72	5661.80	"	0.5	~~51~~ 57	407	12	"	beams dumped
10513	"	18:27	19:09	6.2	6.8	5.5	2015	2687	524	28.7	1077	3217	46	2876	"	"	"	5.59	11.26	5673.06	"	0.5	57	138	3	"	
10514	"	20:28	21:31	9.2	9.8	9.6	3767	8002	979.9	94.4	3027	9890	1133	2903	"	"	"	8.26	31.12	5704.18	"	1.0 10.7	59	384	9	"	
10515	"	21:32	22:47	7.6	8.2	7.6	4534	8002	1180	89.2	3234	9581	1212	2335	"	"	"	7.66	34.73	5738.91	"	.65	58	434	8	"	
10516	"	22:48	23:56	6.5	7.0	5.9	4076	6226	1061	626	2496	7274	927	7195	"	"	"	6.44	26.24	5765.15	"	0.50	56	329	11	"	
10517	"	23:56	0:31	6.0	6.5	5.3	2082	2782	542	28.6	1123	3299	417	616	"	"	"	5.60	11.66	5776.81	"		56	149	2	"	beams ~~lost~~ dumped
10518	7.3.82	1:01	2:20	~~10.6~~ 9.7	7.4	4605	8002	1198	88.1	3236	9405	1222	2256					7.93	38.54	5813.35	"	0,78	57	423	15	"	
10519	"	2:20	3:50	8.0	8.5	6.0	5352	8002	1392	84.0	3247	9425	1214	1954	"	"	"	6.63	35.46	5848.81	"	0.55	56	427	15	"	
10520	"	3:50	4:21	6.5	6.9	5.1	1831	2421	477	24.1	1016	2850	867	520	"	"	"	5.57	10.21	5859.02	"	0.42	58	140	5	"	beams dumped
10521	"	4:54	6:00	11.4	11.6	9.0	3888	8002	1012	91.1	3165	9600	1171	2455	"	"	"	9.07	35.27	5894.29	"	0.95	58	421	14	"	SF
10522	"	6:00	6:09	9.4	9.8	8.0	516	1087	134	10.7	413	1172	153	329	"	"	"	8.06	4.16	5898.45	"	0.66	52	54	1	"	Stopped, DL8 trouble, exchange (1000-1007)
10523	"	6:35	8:00	7.1	7.4	6.2	5046	8002	1313	81.9	3250	9335	1230	1998	"	"	"	6.81	34.37	5932.82	"	0.60	57	425	14	"	
10524	"	8:00	8:02	7.0	7.3	5.5	112	174	29	1.6	69	186	29	38	"	"	"	6.33	0.71	5933.53	"	0.48	56	14	1	"	beams dumped
10525	"	13:36	14:08	7.3	6.8	12.2	1894	3809	432	60.0	1526	4763	554	1536	"	"	"	8.95	1.35	5950.48	"	0.93	60	201	9	"	
10526	"	14:22	14:31	7.1	6.7	5.1	561	727	146	7.5	307	900	109	153	"	"	"	5.45	3.05	5953.53	"	0.43	59	43	0	"	beams dumped
																							2.087+221 = 2318			

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 reg $\times 10^6$	T_1 ACC Sum	T2 ACC Sum	T_1 Bid 2 $E_\mu > 6$ GeV	T_2 Bid 17 $2T \cdot E_\mu \cdot 2\tau$

19[45] Muon matching degrades 138.

20[42] Dump Beam. 50 mins from end of run to start of next.

21[25] New filling ready.

21[30] Start run 10495.

22[30] 'N50 BUSY' Stopped run 10495 and took N50 status.
But the last message was 'N50 PROGRAM RUNNING' ???
We could start run 10496 as usual.

22[55] Beam lost. 23[23] start next run

23[40] JDAS 53 - 140204 & 47 - 0 .
Many messages, 'IOX-error' appear on the data-printer.
We found that one of the power supplies for LG system was ~~on~~ off again.
Switched it off and on.

23[50] 'N50 busy' Stopped run 10498. (We lost status informations by forgetting ~~data~~ dumping LUN!)
We tried 'EXIT' & RT ... two times. But it didn't work.
Reload N10. It works.

[23]58 Start run 10499. But LG system power was down.
0[00] " again!

Rowe & Takeda on shift Saturday 6th March 1982

The power supply of new LG trigger dropped twice. (lower one)

Current limit was raised to maximum.

02[39] YSFY : dig 15 missing. Muon Info. File ⇒ dig 15 only has 2 chambers assoc with it
→ possible statistical fluctuation. This was found to be the case.

0:05 ID tripped.

01[40] Stop run 10501. Power supply for LG is going to be replaced...

2[20] New power supply seems to be OK.
Still we have HV read error. We checked the contacts of CAMAC modules for HV read; and found that they were OK. For the time being, we ignore the HV read errors.

02[02] beams dumped.

05[22] ID kip

05[35] " "

~~Rejection~~ N50	MIP	TOF	⟨L⟩ $\times 10^{30}$	∫Ldt Run	∫Ldt Exp	IBM TAPE	BP [V]	T2 Rej. Fr (%)	Ev.	Bhab.	MH	E_{beam}	Remarks

05[40] Nord 50 busy. Can't restart. Reload N10 → OK.
06[15] " " " " " " " "
06[40] " " " Restarted OK.

6/3
05[40]
Run 10503

```
PLEASE NOTE THE FOLLOWING IN LOGBOOK
  JCLNG =          5388
  I =              5237
  JCA(I  ) =    1096864636
  JCA(I+1) =    1090536053
  JCA(I+2) =    1096178770
  JCA(I+3) =    1090173472
PLEASE NOTE THE FOLLOWING IN LOGBOOK
  JCLNG =          5388
  I =              5241
  JCA(I  ) =    1090629401
  JCA(I+1) =    1085456856
  JCA(I+2) =    1084301144
  JCA(I+3) =    1095546089
PLEASE NOTE THE FOLLOWING IN LOGBOOK
  JCLNG =          5388
  I =              5245
  JCA(I  ) =    1091733844
  JCA(I+1) =    1094110485
  JCA(I+2) =    1091476650
  JCA(I+3) =    1091448085
PLEASE NOTE THE FOLLOWING IN LOGBOOK
  JCLNG =          5388
  I =              5249
  JCA(I  ) =    1091722553
  JCA(I+1) =    1087502604
  JCA(I+2) =    1091768651
  JCA(I+3) =    1097546963
PLEASE NOTE THE FOLLOWING IN LOGBOOK
  JCLNG =          5388
  I =              5253
  JCA(I  ) =    1101574324
  JCA(I+1) =    1098426486
  JCA(I+2) =    1096983519
  JCA(I+3) =          12
- MEMORY OUT OF RANGE  - AT: 120511  -
120511/ 16523170012        LDR   17, 0012, 12, 16
MEMORY OUT OF RANGE                      002442
LAST START ADDRESS:
LAST MEMORY REFERENCE ADDRESS:  006503312S0
LAST DATA TO/FROM MEMORY:       20320170002
BREAKPOINT REGISTER 1 (BP):          077140
BREAKPOINT REGISTER 2 (BQ):          100000
BREAK CONDITIONS SET:
/ PARITY ERROR / STORE REFERENCE /

N50 MONITOR WAITING FOR COMMANDS
```

Thank

6/3/82
06[15]
Run 10504

```
PLEASE NOTE THE FOLLOWING IN LOGBOOK
  JCLNG =          5364
  I =              5237
  JCA(I  ) =    1090370416
  JCA(I+1) =    1087016852
  JCA(I+2) =    1095302860
  JCA(I+3) =    1095438620
PLEASE NOTE THE FOLLOWING IN LOGBOOK
  JCLNG =          5364
  I =              5241
  JCA(I  ) =    1085236416
  JCA(I+1) =    1089373416
  JCA(I+2) =    1092340232
  JCA(I+3) =    1100238992
PLEASE NOTE THE FOLLOWING IN LOGBOOK
  JCLNG =          5364
  I =              5245
  JCA(I  ) =    1092989663
  JCA(I+1) =    1098970239
  JCA(I+2) =    1090352560
  JCA(I+3) =    1098585061
PLEASE NOTE THE FOLLOWING IN LOGBOOK
  JCLNG =          5364
  I =              5249
  JCA(I  ) =    1092469084
  JCA(I+1) =    1092677896
  JCA(I+2) =          68
  JCA(I+3) =          35
- MEMORY OUT OF RANGE  - AT: 120511  -
120511/ 16523170012        LDR   17, 0012, 12, 16
ARITHMETIC OVERFLOW
MEMORY OUT OF RANGE                      002442
LAST START ADDRESS:
LAST MEMORY REFERENCE ADDRESS:  371635273I5
LAST DATA TO/FROM MEMORY:       20320170002
BREAKPOINT REGISTER 1 (BP):          077140
BREAKPOINT REGISTER 2 (BQ):          100000
BREAK CONDITIONS SET:
/ PARITY ERROR / STORE REFERENCE /

N50 MONITOR WAITING FOR COMMANDS
```

you!

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All ×10⁶	To. rej ×10⁶	T_1 ACC Sum	T_2 ACC Sum	T_1 Bid 2 $E_\gamma > 6$ GeV	T_2 Bid 17 $2T \cdot E_\gamma \cdot 2\pi$	Rejection NSD, MIP, TOF	⟨L⟩ ×10³⁰	∫Ldt Run	∫Ldt Exp	IBM TAPE	BP [V]	T2 Rej. Ev. T_γ (%)	Bhab.	MH	E_{beam}	Remarks

6.3.82.

RUN 10505

```
PLEASE NOTE THE FOLLOWING IN LOGBOOK
  JCLNG =          5264
  I =              5237
  JCA(I   ) =   1099255431
  JCA(I+1) =    1091642585
  JCA(I+2) =    1086481460
  JCA(I+3) =    1083679036
PLEASE NOTE THE FOLLOWING IN LOGBOOK
  JCLNG =          5264
  I =              5241
  JCA(I   ) =   1092208678
  JCA(I+1) =    1091469548
  JCA(I+2) =    1082630840
  JCA(I+3) =    1088600246
PLEASE NOTE THE FOLLOWING IN LOGBOOK
  JCLNG =          5264
  I =              5245
  JCA(I   ) =   1091259729
  JCA(I+1) =    1092251271
  JCA(I+2) =    1090493290
  JCA(I+3) =    1091468031
PLEASE NOTE THE FOLLOWING IN LOGBOOK
  JCLNG =          5264
  I =              5249
  JCA(I   ) =   1088696540
  JCA(I+1) =    1089060842
  JCA(I+2) =    1091127754
  JCA(I+3) =    1086331953
PLEASE NOTE THE FOLLOWING IN LOGBOOK
  JCLNG =          5264
  I =              5253
  JCA(I   ) =   1093745557
  JCA(I+1) =    1087465896
  JCA(I+2) =    1092925575
  JCA(I+3) =    1092794521
PLEASE NOTE THE FOLLOWING IN LOGBOOK
  JCLNG =          5264
  I =              5257
  JCA(I   ) =   1089570542
  JCA(I+1) =    1088798922
  JCA(I+2) =    1093082817
  JCA(I+3) =         78
NSB PROGRAM RUNNING
```

one NSD program bug found, which was there since years and happens with very long events. Hopefully, NSDBUSY disappears now.

See Lubarsky's Law of cybernetic entomology.
(Book "Murphy's Law" pg. 39)

8:00 Dittmann, Totsuka.
- LG HV-read is now OK.
  BP counter 24 taken out of rate meter.

10:40 MU digitizers 84 - 93 missing ⇒ reset CAMAC module 8

12:20 trouble with beam transport system. ~~Start~~ Keep beams until repair finished.

16:00 Yamada, Elsen on shift

19:00 Beams dumped

20:18 new fill ready

22:00 ~ 22:15 JOAS error 44 504 twice.

22:20 " " 44 " "

22:35 " " 44 203

23:55 LG Barrel hitmap I shows high count rate for the 1-st ADC (~48 channel), which was not observed for the previous Run (10515). To check the if it is due to lower pedestal for the RUN 10516, we start the next run.

7.3.82.

0:00 Olsson & Kanzaki

0:31 Beams dumped.

1:00 New fill ready.

1:21 ID trip.

4:21 Beams dumped

4:50 New fill ready

6:05 44/705 Time out errors for DL8 crate. → No trigger comes.
Exchanged DL8. (wires 1000-1007) New DL8-Nr. 299

8:00 Hellenbrand, Weidt

12:00 still inspecting...

13:30 finally we get a fill

13:40 JOAS-Error 44, Subsys 203

14:00 —•—

14:10 ID-trip, beams partially lost, we hesitate to ask the present PKR-shift for a new fill, we'll wait till ~ 15 h

14:20 changed DL8 (299) was defect: spike in MEAN HITS/WIRE and "POINTS/TRACK"
RUN 10525 stopped
NEW DL8-Nr 320

14:20 RUN 10526 started, changed DL8 looks better now

14:30 beams dumped

15:23 IBM hang-up for a few minutes (IBM-error 54), IBM will investigate

15:47 ID-trip due to beam instabilities
the beams fade away.. ⇒ we ask for a new fill

1600 Rowe + Minowa

1^{37} I.D. trip

19^{35} " "

23^{14} IBM error 54 → tape for run 10539).

8.3.82 0^{00} Glendinning & Warming on shift

0^{10} IBM up again, next run via link again (10540)

0^{20} beams lost → ID trip

0^{35} quick new fill

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All To ×10⁶	To rej ×10⁶	T_1 ACC Sum	T_2 ACC Sum	T_1 bit 2 $E_1 > 6$ GeV	T_2 bit 17 $2T \cdot E_4 \cdot 2\tau_1$	Rejection NSO	Rejection MIP	Rejection TOF	⟨L⟩ ×10³⁰	∫L dt Run	∫L dt Exp	IBM TAPE	BP [V]	T2 reject event fraction (%)	Bhabhas	MH	E_{beam} [GeV]	Remarks
10527	7.3.82	15:07	15:23	11.0	11.0	23.4	1253	2231	326	259	866	2523	329	745	ON	ON	ON	7.73	9.76	5963.29	IBM	0.85	55	134	2	17.300	
10528-10531	"			—	junk	—	without	Data																			junk due to IBM problems
10532	"	15:43	15:48	10.2	10.0	8.3	260	538	67	5.6	214	625	86	196	"	"	"	7.35	2.04	5965.33	FI 102	0.70	53	28	0	"	
10533	"	15:54	15:58	7.3	7.3	6.4	253	408	66	4.2	136	505	51	106	"	"	"	5.81	1.47	5966.80	IBM		54	15	1	"	beams dumped
10534	"	17:00	18:07	8.0	8.0	9.5	3898	8002	1014	96	3027	10167	631	3031	"	"	"	7.76	30.27	~~5997.07~~ 5997.07	IBM	0.95	58	373	12	17.300	
10535	"	18:07	19:37	6.5	6.5	5.8	5352	8002	1392	81	3353	9354	1201	1888	"	"	"	7.11	38.08	6035.15	"	0.40	57	431	16	"	
10536	"	19.37	20.18	6.0	5.9	5.0	2313	3090	602	30	1343	3452	285	584	"	"	"	6.22	14.39	6049.54	"		56	187	1	"	
10537	"	22.26	23.09	9.0	10.7	9.6	2523	5246	656.6	62.8	1856	6823	709	2058	"	"	"	6.84	17.26	6066.80	"	0.89	58	199	8	17.300	
10538	"																										10 events IBM DOWN
10539	"	23:13	0:11	7.7	9.1	9.8	3485	7030	906.8	88.8	2403	9428	919	2597	"	"	"	6.92	24.10	6090.90	TAPE FI 125	0.8	58	313	7	"	
10540	8.3.82	0:11	0:20	7.5	8.9	7.9	481	911	125.1	9.9	319	1123	106	286	"	"	"	7.59	3.65	6094.55	IBM	0.71	55	34	0	"	beams lost
10541	"	0:43	1:45	11.9	11.6	9.8	3658	8002	951.7	93.5	3134	9790	1803	2784	"	"	"	9.41	34.41	6128.96	"	0.82	58	414	10	17.300	
10542	"	1:45	3:01	9.8	9.7	8.2	4234	8002	1101.9	90.3	3071	10003	1158	2563	"	"	"	7.52	31.82	6150.78	"	0.70	58	380	12	"	
10543	"	3:01	4:02	8.2	8.0	6.4	3621	5729	942.2	60.6	2250	6367	807	1528	"	"	"	6.13	22.20	6172.98	"	0.52	58	263	8	"	beams dumped
10544	"	4:30	5:45	11.5	11.3	9.0	4070	8002	1058.6	95.0	2902	10201	1117	2741	"	"	"	7.16	29.15	6202.13	"	0.9	58	329	8	17.300	
10545	"	5:45	6:42	9.1	8.9	7.2	3433	5699	893.5	64.2	2141	7875	816	1773	"	"	"	5.87	20.16	6222.29	"	0.64	58	234	8	"	
10546	"	6:43	7:17	8.1	7.9	6.3	2052	3104	533.1	33.8	1105	3112	453	893	"	"	"	5.62	11.74	6233.83	"	0.52	58	142	4	"	
10547	"	7:53	8:57	8.5	8.6	9.0	3847	8002	1001.7	90.2	2996	9735	1103	2652	"	"	"	8.33	32.03	6265.86	"	~0.8	58	372	13	17.300	
10548	"	8:58	9:43	8.4	8.6	8.4	2910	5519	705.3	58.9	2105	6290	788	1576	"	"	"	8.41	22.78	6288.64	"	0.68	58	225	7	"	Beams lost
10549	"	11.32	12.42	8.8	9.0	8.2	4171	8002	1086	89.4	3201	9496	1144	2261	"	"	"	8.37	34.89	6323.53	"	~0.9	57	408	9	17.300	
10550	"	12:43	14.08	7.1	7.3	5.9	5104	8002	1328	98.9	3370	9124	1237	1761	"	~~OFF~~ "	OFF	9.47	38.12	6361.65	"	0.7	57	448	15	"	
10551	"	14:09	14:31	6.8	6.9	5.8	1305	2040	339.9	19.7	864	2234	313	422	"	"	"	9.14	9.31	6370.96	"	0.54	55	124	3	"	Beams dumped.
10552	"	15:24	16.38	11.6	11.4	8.0	4370	8002	1137	90.6	3113	9023	1118	2304	ON	ON	OFF	7.40	32.36	6403.32	"	0.95	57	378	21	17.300	
10553	"	16 38	17:51	7,2	8,0	6,4	4369	6950	1137	73,1	1064	8356	1027	1751	ON	ON	OFF	6.69	29,25	6432.57	"	0.61	57	370	8	"	IBM died
10554	"	17:53	18:15	6.9	7.6	5,3	1301	1844	338	17,8	330	2252	273	2183	"	"	"	6.23	8,11	6440.68	FI1370	0.55	57	97	2	"	WRITE ON TAPE
10555	"	20.12	21.25	8.5	8.8	7.3	4237	8002	1102	80	3476	9045	1346	2049	"	"	"	9.48	40.16	6480.84	IBM	0.85	57	533	15	17.300	
10556	"	21.26	22.56	6.9	7.1	5.4	5319	8002	1383	75	3540	8592	1378	1712	"	"	"	7.97	42.37	6523.21	"	0,6	56	485	11	17.300	
10557	"	22.56	23.46	6.1	6.3	4.7	2957	4018	769	36	~~733~~ 781	4406	664	769	"	"	"	6,47	19,14	6542.35	"	0.5	57	253	10	"	
10558	9.3.82	0 40	1 47	10.8	11.3	7.9	2601	4824	677	54	1817	6401	662	1633	"	"	"	6.64	17.27	6559.62	"	0,90	58	270	8	"	
10559	"	5 36	6:55	7.5	7.6	7.1	4685	8002	1219	87	2306	10317	1070	2688	"	"	"	5.82	21.27	6586.89	"	0.80	59	350	11	"	
10560	"	6:55	7:06	6.4	6.5	6.4	629	985	163	10	357	1243	120	304	"	"	"	5.47	3.44	6590.33	"	0.60	58	33	0	"	beams dumped
10561	"	7 51	9:17	8.0	8.7	5.9	5090	8002	1325	78	3373	9243	1182	2025	"	"	"	7.45	37.94	6628.27	"	0.70	57	416	16	"	
10562	"	9:18	10:11	6.6	6.4	4.8	~~43197~~ 4328	832	40	1927	4912	669	863	"	"	"	6.51	20.83	6649.10	"	0.5	58	269	8	"	beams dumped
10563	"	10:40	11:33			7.2	3137	5901	817	59	2547	6457	940	~~1533~~	"	"	"	9.29	29.51	6678.61	"	0.75	~~57~~ 58	347	9	"	beams lost

2318 + 263 = 2581

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	To reg. $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 $E_4 > 6$ GeV	T_2 Bit 17 $2T \cdot E_4 \cdot 2\pi r$

100

8.3.82

4⁰⁰ asked for a new fill
4³⁰ again a quick fill ready
4⁴⁵ beam loss - optimization - id trip
7⁰⁵ ask for new fill
7⁵⁰ new fill ready
8⁰⁰ Takeda & Haidt on shift
Muon digitizer 3 was missing
12.43 The TOF - Ags processor is off from Run 10550 on. Shall be kept off until noon tomorrow.
16⁰⁰ Goeckeler & Olsson
17⁵² IBM breakdown
20²⁰ ID trip
22³⁰ Run 10556 has a different triggen on bit 14 T1 acc. 2-3 coplanar (opposite) septants. The Gate for septants has been shortened to 60 usec. The triggen runs with veto for any TOF and has a very low rate. This triggen mode is left in for the time being.

9.3.82 0⁰⁰ Wriedt, Felst
0:47 ID-trip
1:10 ID-trip: the usual ~~#~~ partial beam loss at about 10 mA / beam.
after about 40 min PKR after filling the PKR does some beam adjustment
this time without any notice, shows up by very short lifetime of the beams, we urgently asked to be informed before, watch it and complain

1⁴⁵ filling miserable, luminosity low ask for new filling
5⁰⁰ PKR doesn't manage to get proper filling
5³⁵ start run with 2 x 7.5 mA
7⁰⁵ ask for a new fill, since there is now a new crew at PKR
8⁰⁰ Totuka & Warming on shift
10¹⁰ new filling
11³⁰ beams lost — short break — Magnet current went to zero.
LUM1, INTLUM1 in the run summary were zero!
13¹⁰ beam ready
15:51 ID trip no beam low
16⁰⁰ Olsson, Goeckeler

16⁴⁰ Standard Histograms altered to introduce LC endcap histmap (HFM)
16⁴⁴ The McCann clan is increased by 1 with ~~the birth~~ of Michael Peter McCann

Rejection NSD	MIP	TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T2 Rej. Ev. Fr (%)	Bhab.	MH	E_{beam}	Remarks

101

Event # 1 to ca 460.

'0 can not be started" on screen
nual device for NSD batch occupied' on L.P.
'ale, several people played with it 17°-20°°

run
mory out of range'. see separate mess.

all restarted. This time we switched HC 89 off!

10.3.82 0⁰⁰-8⁰⁰ Rowe, Petersen

7⁰⁵ new filling
6⁴⁰ new filling
7³⁰ Standard histograms show no significant error!

8⁰⁰-16⁰⁰ Felst, Yamada on shift

9⁴⁵ beams lost due to transmitter problems, turn magnet → 4000 A short break

11⁴⁰ Changes made to YSPY to include more checks on T1 Input and part of T1 Output. Beware of any strange happenings! (HFM)

13²⁵ beams again, magnet up,
While the average luminosity shows $9.62\ 10^{30}$, which is reasonable, show the other monitors ups
every $L = 29 \times 10^{30}$, $\int L = 49.89\ E29$, $L = 31.32\ E30$ at the first plotting round it changed to
$L = 9166$ " $= 16.9$ " 10.4 " at the second round
15⁰⁰ people planned during the next filling time they want to do some machine studies
to be able to reproduce "good fillings" like the present one
15¹⁰ IBM link trouble.
IBM transfer error 54 140000 (timeout at MPX-station
link was tried again. → another JDAS error followed. 45 1 once.

Run	Date	Start	Stop	I_+ at Run start	I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	To reg. $\times 10^6$	T_1 ACC Sum	T2 ACC Sum	T_1 Bit 2 $E_\gamma > 6$ GeV	T_2 Bit 17 $2T \cdot E_\gamma \cdot 2\pi$

100

8.3.82

From Mo 8.3 12.00 (NOON) until further notice ~~to Tue 9.3. 12.00 (NOON)~~ the TOF-Agg processor shall be kept off!

(According to a most urgent desire of B.N.!)

4^{00} asked for a new fill
4^{30} again a quick fill ready
4^{45} beam loss - optimization - id trip
7^{15} ask for new fill
7^{50} new fill ready
8^{00} Takeda & Haidt on shift
Muon digitizer 3 has missing
12.43 The TOF - Agg processor is
16^{00} Godelund & Olsson
17^{52} IBM breakdown
20^{20} ID trip
22^{30} Run 10556 has a different triggen on bit 14 T1 acc. 2-3 coplanar (opposite) septants. The Gate for septantxs has been shortened to 60 usec. The triggen runs with veto for any TOF and has a very low rate. This triggen mode is left in for the time being.

9.3.82 0^{00} Wredt, Felst

0:47 ID-trip
1:10 ID-trip: ~~The usual~~ partial beam loss at about 10 mA / beam.
after about 40 min PKR after refilling the PKR does some beam adjustment
this time without any notice, shows up by very short lifetime of the beams, we urgently asked to be informed before, watch it and complain

1^{45} filling miserable, luminosity low ask for new filling
5^{00} PKR doesn't manage to get proper filling
5^{35} start run with 2 x 7.5 m A
7^{05} ask for a new fill, since there is now a new crew at PKR
8^{00} Totsuka & Warming on shift
10^{10} new filling
11^{30} beams lost - short break - Magnet current went to zero.
LUMI, INTLUMI in the run summary were zero!
13^{10} beam ready
15:51 ID trip no beambox
16^{00} Olsson, Godelund

16^{40} Standard Histograms altered to introduce LC endcap histmap (HEM)
16^{44} The McCann clan is increased by 1 with ~~the~~ birth of Michael Peter McCann

Rejection NSO	MIP	TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T2 Rej. Ev. Fr (%)	Bhab.	MH	E_{beam}	Remarks

101

2,00
~~18.00~~ TOF Miprocs on for run 10567 Event #1 to ca 460.
Nord restarted.
This happened because we had to restart N10-50. "NSO can not be started" on screen
"Internal device for NSO batch occupied" on L.P.
JDAS 56 :563
HEM.: Maybe the system was left in an undefined state, several people played with it 17°-20°

JDAS 56 :563
" " 563 repeated, we stop run 10567

21.13 'NSO Busy' message, stopped run
then message on screen: 'memory out of range'. see sequence mess.
all restarted. This time we switched Ac 89 off!

10.7.82 0^{00}-8^{00} Rowe, Petersen

7^{05} new filling
6^{40} new filling
7^{30} Standard histograms show no significant error!

8^{00}-16^{00} Felst, Yamada on shift

9^{45} beams lost due to transmitte problems, run magnet → 4000 A short break

11^{40} Changes made to YSPY to include more checks on T1 Input and part of T1 Output. Beware of any strange happenings! (HEM)

13^{25} beams again, magnet up,
While the average luminosity shows $9.62\ 10^{30}$, which is reasonable, show the other monitors up
many $L = 29 \times 10^{30}$, $\int L = 49.89$ E28, $L = 31.32$ E30 at the first flashing round it changed to
$L = 9166$ " $= 16.9$ " 10.4 " at the second round
15^{00} People planned during the next filling time they want to do some machine studies
to be able to reproduce "good fillings" like the present one
15^{10} IBM link trouble.
IBM transfer error 54 140000 (timeout at MPX-station
link was tried again. → another JDAS error followed. 45 1 once.

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	To. reg. $\times 10^6$	T_1 ACC Sum	T2 ACC Sum	T_1 Bit 2 $E_1 > 6$ GeV	T_2 Bit 17 2T. E_4 2Tr	Rejection NSO	Rejection MIP	Rejection TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T2 Rej Ev Fr (%)	Bhab.	MH	E_{beam}	Remarks
10564	09.03.82	13:15	14:29	8.7	8.9	7.0	4465	8002	1162	81	3509	8867	1315	~~1998~~	ON	ON	OFF	8.93	39.86	6718.47	IBM	0.86	58	507	18	17.300	128.14
10565	"	14:30	15:52	7.0	7.3	5.9	4894	8002	1274	75	3467	8791	1289	1746	"	"	"	7.95	38.90	6757.37	"	0.59	56	430	11	"	ID Trip
10566	"	15.52	16:31	6.4	6.6	5.1	2290	3252	578	29.6	1375	3563	592	3692	"	"	"	6.87	15.75	6772.62	"	0.5	56	195	4	"	
10567	~~"~~	19.57	20.12	9.3	10.9	7.5	812	1356	211	16	561	1548	211	388	ON	ON	OFF	~~7~~	5.69	6778.31	"	0,8	59	68	2	"	Stopped, due to TOF TDAS 56:563
10568	9.3.	20:12	21.13	8.0	9.5	6.9	3638	6608	947	65	2659	7986	938	1667	"	"	"	7,27	26,43	6804,74	"	0,75	57	303	5	"	" " " NSO Busy
10569	"									trash																	Trash run, NSO not working
10570	"	21.23	22.91	6.5	7.8	6.3	4661	8002	1212	76	3221	8789	1147	1678	"	"	"	6.73	31.36	6836.1	"	0,6	57	347	9		
10571	"	22.42	0.09	5.3	6.4	5.3	5229	8002	1360	72	3336	8877	1149	1547	"	"	"	5.71	29.88	6865.98	"	0,5	58%	345	7	"	
10572	10.3.82	0.10	0.27	5.1	6.2	4.7	972	1321	253	12	538	1495	179	255	"	"	"	5.09	4.94	6870.92	"	0.5	59%	48	3	"	Beams dumped
10573	"	2.05	3.29	7.5	8.3	6.6	5037	8002	1310	86	3079	9894	1115	2300	"	"	"	5.87	29.58	6900.50	"	0.82	58%	364	10	"	
10574	"	3.29	5.06	6.1	6.8	5.1	5824	8002	1515	78	3296	9527	1184	1833	"	"	"	5.52	32.14	6932.64	"	0.55	57%	389	23	"	
10575	"	5.07	5.26	5.9	6.6	5.1	1114	1449	290	14.9	597	1669	200	285	"	"	"	5.35	5.96	6939.60	"	0.45	56	58	2	"	Beams dumped
10576	"	6.44	7.59	8.0	9.3	7.4	4467	8002	1162	86	2900	10166	1049	2718	"	"	"	6.24	27.86	6967.46	"	0.95	58	322	13	"	
10577	"	8.00	8.29	6.4	7.7	5.6	5350	8002	1392	78	3387	9301	1263	1854	"	"	"	6.14	32.87	7000.33	"	0.70	58	424	14	"	
10578	"	9.29	9.43	6.1	7.3	4.8	791	1073	206	9.9	444	1246	154	220	"	"	"	5.63	4.45	7004.78	"	0.50	56	62	2	"	Beam bit du transmitter problem
10579	"	13.37	~~14.43~~ 14.43	11.2	11.6	7.2	~~8002~~ 4244	8002	1105	80	3458	8871	1279	2088	"	"	"	8.89	37.74	7042,52		0.85	58	469	16	"	
10580	"	14.43	15.56	7.5	7.9	8.0	4368	8002	1136	80.8	3265	9088	1270	2018	"	"	"	8.12	35.47	7077,98	IBM	0.70	57	405	16	"	
10581	"	15.56																	~16.	7093,99	"	0.60					no run summary (NSO breakdown)
10582	"	only 2 minutes (machine stop). Forget it.																									
10583	"	21.58	~ 22.30					~5000							ON	ON	OFF		~ 17.	7110,99	IBM	0.90	40 summary				Breakdown of Nord, dead start
10584	"	23.07	23.37	7.9	8.9	7.3	1754	3067	456	33.2	1241	3401	460	751	ON	ON	OFF	7.99	14.02	7125,01	IBM	0.60	55	165	8	17.300	
585	11.3.82	23.38	1.02	6.5	7.4	6.0	5017	8002	1305	79	3314	9154	1201	1855	"	"	"	7.14	35.81	7160.82	"		59%	425	12	"	
586	"	1.02	2.16	5.5	6.3	5.1	4426	6172	1152	59	2579	7105	907	1307	"	"	"	6.07	26.88	7187.70	"		57	319	15	"	
10587	11.3.82	3.02	4.18	9.1	8.7	7.0	4306	8002	1121	78	3380	9002	1277	1979	"	"	"	8.91	38.75	7236.05	"	0.6	58	479	14	"	NORD stopped no run summary
10588								~3000											~10	7236		~~0.5~~					only 16 events
10589								0										~~12~~ 7.2	~~8~~ 3.92			0.5					NORD stopped again no run summary
10590																											beams lost
591	"	5.36	5.43	7.4	7.1	6.3	379	696	98	6.1	286	~~780~~	107	~~170~~	"	"	"	6,85	2.60	7238,6	"		52	38	1	"	
10592	"	8.26	8.50	10.9	11.1	9.5	1414	3091	368	34.9	1299	3586	474	906	"	"	ON	9.40	13.29	7251.89	"	0.85	59	177	5	"	stopped run to switch off TOFAS
10593	"	8.50	10.06	9.9	10.4	6.9	4502	8002	1172	80.3	3411	9064	1225	2116	"	"	OFF	8.54	38.46	7290.35	"	0.65	58	448	20	"	
10594	"	10.06	~~11.29~~ 11.30	8.1	8.6	6.1	4955	8002	1290	78.1	3307	9214	1214	1896	"	"	"	7.08	35.06	7325.41	"	0.55	57	427	14	"	
10595	"	11.30	11.30	6.7	7.1	6.8	25	50	7	0.5	12	46	5	7	"	"	"	6.33	0.16	7325.57			54	3	0	"	Beams dumped
10596	11.3.82	12.20	13.33	12.0	10.9	7.5	4306	8002	1121	84.3	3318	9017	1202	2171	"	"	ON	9.12	39.26	7364.83	"	0.70	56	453	15	"	
10597	"	13.33	14.59	9.5	8.8	6.3	~~4955~~	8002	1290	81.4	3411	8957	1284	1868	"	"	"	7.66	37.96	7402.79	"	0.60	57	433	20	"	
																								25814	279 =	2860	

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	To reg $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 $E_\gamma > 6$ GeV	T_2 Bit 17 $2T \cdot E_\gamma \cdot 2\pi$

104

10.3.82

16⁰⁰ Haidt + Bethke on shift

16⁵⁷ Nord crash, reload run summary 10581 lost What sort of crash?

17⁰⁰ Machine studies by Agile & Piwinski

17⁴⁵ I have made another attempt to cure the muon crate 8 intermittent missing responses. If the 'muon crate missing' message appears and stays permanently when data-taking restarts, call me. (82 83 01). If it is intermittent, as before, don't bother calling me! A.B.

Tektronix smells, break down

21⁵⁸ Filling ready (run # 10583) with high currents

22²⁰ The normal display terminal (Tektronix 4014 at left of JDAS console) apparently broke down. This has been removed to balcony and plugs underfloor rearranged so that the RHS Tektronix is unit 34

HER

22⁵⁰ Nord stands still without any message (after ~ 5000 seconds).
PKR phones: no Lumi-info from Jade for the whole run (since 21⁵⁸). But all things were ok.
We made cold start of Nord. Started run 10584 (

23¹³ Error 56 Suberr 563 Task 1 ← this clears list 100.

23⁴⁴ Histogr. 100 (Luminosity) empty, although we had several runs (also the previous shifts)

23⁵⁶ JDAS Error 56, 563 comes now all ~ 2 minutes

PKR has now Lumi-information from JADE, also list. 100 begins to have entries.

24⁰⁰ Steffen + Goddard

11.3.82

3⁰⁰ In checking the standard histograms we found that the 'FORWARD COUNTER MEANTDC' has 8 channels low. Call Beate in the morning.

5⁰⁰ Data acquisition suddenly went dead. No response from terminal 9. We reloaded the computer + continued. Again went dead on next run also. Reload computer once more. Level 7

8⁰⁰ Naroska & Kanzaki on shift.

8²² News filling.

Run	Rejection NSD	Rejection MIP	Rejection TOF	⟨L⟩ $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T2 Rej. Ev. Fr (%)	Bhab.	MH	E_{beam}	Remarks

105

8.30 Noticed that TOF-FLIPROC was on. Probably since last restart of computer. This is what produced the dude in the distributions. If computer crashes and you restart, you have to switch off TOF FLIPROC. (T19, F9, 1↑, 0↑ when run is stopped!!!)
↑ should be "2" for TOF Think

Please Note
In event of Nord "crash" try following procedure at back of section 5, in the famous "What to know about JDAS". Just saying "Nord Crash" is pretty useless!

HER

10⁴⁵ HV read errors (LG). We checked the connectors of 'ALARM PROCESSOR' that is on the NIM crate at the left side of LG HV power supplies. → o.k. It works.

11³⁰ Beams dumped.

12³⁰ I confirm the observation, made yesterday, that the L,S,L,A green L calculation are sometimes wrong at run start but IL & AL are ok. We will investigate. HER.

Run

13³⁵ ID

15⁵⁰ Eve
be

16:00 Hell

17:16. N

From Run 10599 on

```
TRIGGER HARDWARE STATUS
LAST UPDATE: KREHBIEL,11/3/82

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

        BG        0.080 GEV
        EG        0.050
        ES        0.150

T1 ACCEPT
BIT  COND.
 1   LUMI
 2   EC[1]
 3   TAGG * E[3]
 4   FAMU_OFF!
 5   EMPTY

BIT  COND.
 9   EC1[2] * EC2[2]
10   ( EC1+EC2 )[3] * B[4]
11   TAGG * B[4]   ← changed from B[3] to [B4]
12   B[2]
13   EC1[4]*EC2[4]*E[2]
14   SEFT2 * <1T
16   RANDOM CA 0.01 HZ

OTHER BITS NOT USED AT THE MOMENT

T1 POSTPONE COND.        T2-COND.
17   2T * E[4]           ) 2TR-ALL
18   NOT USED
19   (EC1+EC2)[2]*2T     OFF!
20   2TBG-NS * <7T       ) 2TR-ALL
21   NOT USED
22   NOT USED
23   NOT USED
24   FAMU[6] * (3TR-ID + 1MU-FWD)

BIT  COND.               T2-COND.
25   1TBG * B[4]         ) 1TR-FST
26   TAGG * 1TBG         )   ← Was formerly Bit 18; Tagg * 2TBG * 2TR-ALL
27   NOT USED
28   NOT USED
29   T-COL[3] * <5T      )
30   T-COL[1] * <7T      ) TR-FST-COL
31   TBG-COL[2]          )
32   NOT USED
```

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	To reg. $\times 10^6$	T_1 Acc Sum	T_2 Acc Sum	T_1 Bit 2 $E_\gamma > 6$ GeV	T_2 Bit 17 $2T \cdot E_\gamma \cdot 2\pi$

104

10.3.82

16^{00} Haidt + Bethke on shift

16^{57} Nord crash, reload run summary 10581 lost — What sort of crash?

17^{20} Machine studies by Zeile & Pirzinski

17.45 I have made another attempt to cure the muon crate's intermittent missing responses. If the 'muon crate missing' message appears and stays permanently when data-taking restarts, call me. (82 83 01). If it is intermittent, as before, don't bother calling me! A.B.

Tektronix smells, break down

21^{58} Filling ready (run # 10583) with high currents

22^{20} The normal display terminal (Tektronix 4014 at left of JOAS console) apparently broke down. This has been removed to balcony and plugs underfloor rearranged so that the RHS Tektronix is unit 34

HER

22^{50} Nord stands still without any message (after ~ 5000 records).
PKR phones: no Lumi-info from Jade for the whole run (since 21^{58}). But all things were ok.
Made cold start of Nord. Started run 10584 (

23^{15} Error 56 Subcor 563 Code 1 ↑ this clears list 100.

23^{45} Histogr. 100 (Luminosity) empty, although we had several runs (also the previous shifts)

23^{46} JOAS Error 56, 563 comes now all ~ 2 minutes

PKR has now lumi-information from JADE, also list. 100 begins to have entries.

24^{00} Steffen + Goddard

11.3.82

3^{00} In checking the standard histograms we found that the 'FORWARD COUNTER MEAN TDC' has 8 channels low. Call Beate in the morning.

5^{00} Data acquisition suddenly went dead. No response from terminal 9. We reloaded the computer + continued. Again went dead on next run also. Reload computer once more. — Level 9?

8^{00} Naroska & Kanzaki on shift

8^{22} New filling.

Run	Rejection NSD	Rejection MIP	Rejection TOF	$\langle L \rangle \times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T2 Rej. Ev. Fr (%)	Bhab.	MH	E_{beam}	Remarks

105

8.30 Noticed that TOF-MIPROC was on. Probably since last restart of computer. This is what produced the hole in the distributions. If computer crashes and you restart, you have to switch off TOF MIPROC. (F19, F9, 1↑, 0↑ when run is stopped!!!)
↑ should be "2" for TOF I think

Please Note
In event of Nord "crash" try following procedure at back of section 5 in the famous "what to know about JOAS". Just saying "Nord Crash" is pretty useless!
HER

10^{45} HV read errors (LG). We checked the connectors of 'ALARM PROCESSOR' that is on the NIM crate at the left side of LG HV power supplies. → o.k. It works.

11^{30} Beams dumped.

12^{30} I confirm the observation, made yesterday, that the L, SLd green L calculation are sometimes wrong at run start but IL & AL are ok. Will investigate. HEM.

Run 10596 TOF MIPROC ON AFTER INIT LOAD. NOW WORKS FINE

13^{35} ID trip. Anode current & HV output.

15^{50} Event display – have changed the Muon display to read the raw banks. Should be no different – but beware of strange happenings. HEM

16:00 Hellenbrand & Darvill on shift

17:16. Nord Jam! – 2 digit load register = 03 Nord then reloaded. | Apparently the Nord was reloaded at 16.00 (remote in log book) and it hung when starting a run. HEM

In accordance with Beate's instructions the TOF MIPROCS have been turned OFF

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	T0 rej. $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 E_{17} > 6 GeV	T_2 Bit 17 $2T \cdot E_4 \cdot 2T_1$	Rejection NSD	Rejection MIP	Rejection ToF	<L> $\times 10^{30}$	$\int$Ldt Run	$\int$Ldt Exp	IBM TAPE	BP [V]	T2 Rej. Ev. Fr (%)	Bhabh.	MH	E_{beam}	Remarks
10598	11.3.82	15^{00}	15^{19}	7.7	7.1	5.5	1065	1612	277	15.2	670	1789	270	337	ON	ON	OFF	6.56	6.98	7409.77	IBM	0.5	56	98	1	17.300	
10599	11.3.82	17:29	18:48	8.2	8.1	6.5	4654	8002	1210	78.5	3523	3828	1273	1845	ON	ON	OFF	8.58	39.93	7449.70	IBM	0.63	57	457	17	17.300	
10600	"	18:43	20:05	6.9	6.8	5.4	4555	6920	1186	64.5	2855	7703	1031	1380	ON	ON	OFF	6.8	30.96	7480.66	IBM	0.5	55	371	14	17.300	
10601	11.3.82	22:38	22:59	11.0	10.3	9.2	1227	2680	319	29.3	1119	3037	408	896	ON	ON	ON	10.12	12.41	7493.07	IBM	0.87	57	147	3	17.300	
10602	"	23:04	0:12	9.1	8.6	7.8	4074	8002	1061	82.2	3226	8968	1203	2057	ON	ON	ON	8.73	35.55	7528.62	IBM	0.65	55	436	14	17.300	
10603	12.3.82	0:13	0:19	8.9	8.4	7.2	310	611	80	5.8	264	633	86	142	ON	ON	ON	7.74	2.40	7531.02	IBM	0.6	54	26	3	17.300	
10604	"	0:19	0:24	8.7	8.2	6.4	266	457	69	4.4	204	486	40	90	"	"	"	7.71	2.05	7533.07	"	0.55	57	34	0	17.300	
10605	"	0:37	2:05	7.0	6.6	6.7	5272	8002	1371	92	3305	9043	1159	1581	"	"	"	6.72	35.43	7569.50	"	0.55	56	415	14	17.300	
10606	"	2:05	2:33	6.5	6.1	5.1	1652	2263	430	21	962	2574	354	421	"	"	"	6.31	10.43	7579.93	"	0.45	57	125	4	"	
10607	"	2:41	2:42	6.5	6.1	8.2	63	99	16	1	40	93	10	18	"	"	"	5.30	0.33	7580.26	"	0.45	55	5	0	"	Beams dumped
10608	"							~5406							"	"	"		~23.00	7605.26	IBM	0.85				17.300	no run summary (Nord crash)
10609	"	4:07	5:22	8.3	8.0	7.2	4455	~~5886~~	1159	83	3298	9082	1216	1966	"	"	"	7.91	35.24	7640.50	"	0.60	56	433	16	17.300	
10610	"	5:22	6:39	7.0	6.7	6.2	4628	7332	1264	75	3072	8261	1149	1651	"	"	"	6.72	31.13	7671.63	"	0.50	55	380	9	"	Beam dumped
10611	"	7:59	9:06	9.8	9.1	8.3	3995	8002	1040	86	3221	9039	11196	2038	"	"	"	8.78	35.09	7706.72	"	0.75	55	422	19	"	
10612	"	9:06	10^{24}	8.1	7.5	7.0	4676	8002	1217	85	3173	9336	1215	1809	"	"	"	7.32	35.23	7741.85	"	0.64	57	428	20	-	
10613	"	10^{26}	11^{02}	7.5	6.9	11.6	~~2163~~	3055	565	66	1234	3455	439	611	"	"	OFF	5.99	13.00	7754.85	"	0.5	56	149	4	-	Beams dumped
10614	"							~3000							ON	ON	~~OFF~~ ON		~15.00	7769.95	"	0.80				"	Run summary lost, Nord crash.
10615	"	19.48	14:03	7.5	8.0	7.2	4479	8002	1166	83	3244	9235	1213	2010	"	"	ON	7.70	34.50	7804.45	"	0.60	56	428	12	"	
10616	"	14:04	14:28	7.1	7.5	8.6	1432	2184	372	32	800	2502	326	501	"	~~OFF~~ ON	OFF	6.65	8.52	7813.97	"	0.50	~~56~~	144	3	"	
10617	"	14:29	14:48	6.8	7.2	6.3	1113	1755	290	18	696	1986	264	342	"	"	"	6.42	7.15	7821.12	"	0.4	55	84	3	"	Beams dumped
10618	"	15.22	16.17	11.43	11.55	8.4	3260	6767	848	71	2603	8161	1002	1947	"	ON	OFF	8.55	27.87	7848.99	" FII 138	.9	58	329	9	17.3	Std Run
10619	"	16.29	17.04	9.42	9.93	8.8												7.62	16.27	7865.26	TAPE	.66					FADC - level 9 hang
10620	"	17^{09}	17^{19}	8.06	8.74	7.5	519	925	134	10	361	1024	133	220	ON	ON	OFF	7.73	4.04	7869.27	IBM FII 150	.58	54	41	Ø		FADC Joblink err 53
10621	"	17^{27}	17^{33}	7.84	8.57	7.4												6.82	4.95	7874.22	TAPE	.56					FADC level 9 hang - curses
10622	"	17^{39}	—	7.52	8.19																IBM	.56					FADC hung level 9 again
10623	"	17^{42}		7.46	8.11	6.8		2222										6.59	9.34	7883.56	IBM	.5					FADC " " "
10624																					IBM	~~.78~~				17.3	Junk run - DL9 trouble
10625	"	18^{55}		11.50	10.65			~1000																			FADC Another level 9 hang stopped for Discount
10627	"	19^{29}	19^{45}	10.32	9.64	7.5	899	1633	233	17.5	676	1960	254	407	ON	ON	OFF	9.16	4.51	7898.07	"	.68					No FADC crate 4 SB7 out
10628	"	19^{46}	21^{00}	9.92	9.24	6.7	4408	8002	1147	77	3320	9031	1241	1942	"	"	"	7.71	6.92	7896.99	"	.66					No FADC
10629		~~21^{00}~~ 29	21^{01}					119							"	"	"	7.98	35.19	7930.18	"	.59	56%	441	12		FADC - level 9 hang
10630		21^{06}	22^{01}	9.1	6.7	7.6	3425	6272	891	67.5	2379	7652	860	1502	"	"	"	6.51	22.31	7952.49		.67	57%	287	9		Beams dumped
10631	"	23^{00}	23^{06}	11.97	11.70	8.3	248	505	64	5	194	563	78	161	"	"	"	9.12	2.26	7954.75	IBM	.76	57%	21	Ø	17.3	Beam optim New F.11
10632	"	23^{11}	0.38	11.33	11.21	8.2	3358	8002	1030	85	3074	9436	1165	2283	"	"	"	8.2	32.24	7986.99	"	.74	56	383	13	"	
																								2807 + 1999 = 3059			

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	To. reg $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bid 2 $E_\gamma > 6$ GeV	T_2 Bid 17 $2T \cdot E_\gamma \cdot 2\pi$

21^{30} YCLRTV reloaded - Luminosity calculations altered. Beware any strange numbers (top two should be OK). HEI

TOF miprocs reloaded following method in JDAS book. Turned On for next run. (10601)

22:37 At last our new filling is ready and we start the run — MUON CRATE MISSING - CRATE 10 - reset mem

22:59 Run 10601 stopped to allow Tokyo to check trigger timing.

23:03 Run 10602 started.

23:25 FORWARD COUNTERS checked after 3000 events of RUN 10602 they don't show behavior described on page 704 (3^{oo})

0:00 Elsen, Bethke on shift

0:25 Thousands* JDAS - errors 44, 704. DL8's in the whole crate do not convert. Change crate-controller → all things are ok now. (*exaggerated)

0:36 start, after this, run 10605

0:58 New sequence of ~~TOF~~ time outs, which disappear after ≤ 1 min.

2:40 Get errors: 44 sub ~~ADC~~ 0 followed by 44 206
Console printer signals ERROR 37 10x error Level 8 or 1
Stop run. Test run without IBM works nicely. Start run 10607

2:41 Stop run for beam dump.

4:00 Nord crash. level 9. All terminals dead. data 9 +13 ou.
reloaded → o.k. No run-summary or histograms.

8:00 Bartl / Olsson

9^{40} Message on printer when playing with the event display
YEDISP Range entry code 0 00 000 3 - 3627
0 16518 1 0000 34 when pressing register ev. display
This error does not occur regularly must have pressing everything was ok again

10:24 Switch off TOF - to prove that run 10613 without TOF - to prove

11:00 ask for new fill

11:20 YRUNSM updated to remove segment swapping (not needed anymore) and YCLRTV has some debug printing to try to chase BUGS.

Rejection NSD, MIP, TOF	$\langle L \rangle$ $\times 10^{30}$	$\int$ Ldt Run	$\int$ Ldt Exp	IBM TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhab.	MH	E_{beam}	Remarks

11:30 Start run 10614
From this run on the flash ADC's are read out adding 1000 words to each event.

12:40 All terminals dead. Restart NORD. Run summary to 10614 lost.

14:20 44:704 again. Pause + continue helps

15:23 Running again.

Message from Austin Ball

The intermittant "MUON CRATE MISSING" problem has most probably been solved. Shift crewes are requested to keep an eye open for this (on TV screen & run summary). IF >100 Mu crate missing per 8 hrs run then call a Muon Expert

12/3/82 HEI

16^{00} H. Mills, B. Naroska on Shift

16^{25} IBM link collapses - we write to tape. Link stays off some time

16^{55} ID trip

17^{02} JDAS err 44/703 - DL8 time out. Has been happening over last few hours

17^{07} Nord hung on level 9 - When I tried to log onto T34 - I pressed the ESC - nothing happened on the Tektronix but Nord crashed. Interesting?
Tape terminated with EOFs

17^{34} Again Nord hung on level 9 whilst I was editing a file

17^{38} Level 9 hang again - and I hadn't touched anything. During next kill will probably try to rebuild. Notice that YSPY is inactive. (Of course - it only works if F1 start)

18^{15} Beam dumped. Nord memory error log cleared and whole of DAS rebuilt. HENTnotrun

18^{45} New beams - now 44/704 hard on
Solved - another level 9 hang, Reload then 44/704 again
If we turn the crate offline it all works!

Run	Date	Start	Stop	I_+ at Run start	I_- at Run start	DT (%)	Time (s)	Rec out	All $\times 10^6$	To. rej $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 $E_\gamma > 6$ GeV	T_2 Bit 17 $2T \cdot E_\gamma \cdot 2\pi$	Rejection NSD	MIP	TOF	$\langle L \rangle$ $\times 10^{30}$	$\int$ Ldt Run	$\int$ Ldt Exp	IBM TAPE	BP [V]	T2 Rej. Ev. Fr. (%)	Bhab.	MH	E_{beam}	Remarks

19[27] Weary of Nords & Camac, we turn the offending crate off and do a standard Run (F1)
Just by waving his hand, Sigi Bethke makes the crate 4 BRT work again. Now we are trying a run (F1 - std run).

20[47] Muon Digitiser 138 no hits in last 1k events.

21[00] 8000 events sucessfully taken via the standard run (F1). Tried a run with the Flash ADC readout - hung after 119 events. Seems pretty conclusive?

23[00] New Fill (took one hour).

23[30] Background optimisation: Enquired with PkR: They are trying to improve the luminosity. Without much success.

SPY now checks T3 INPUT // Recomendation is not to read the FlashADCs at present. (so normal F1 starts)
TOF µprocs should be OFF
MP-16 " " " ON

13/3/82

0:00 Dittmann + Glendinning on shift.
1:30 JDAS 44 SUB 704 2x
2:30 New fill starts with 1.2×10^{31} $\mathcal{L}$
3:00 Breakdown of F58 Link computer (IBM ERROR 53)
(one realizes that it is the F58 part of the IBM Link, because at run start one has to type in currents and energy, like in the old days)
Tasso writes to disk, we to tape but Pluto has no other facility to write data, so they will try to get Hockwellers et al. in.
3:15 JDAS ERROR 44 SUB 703 2x
4:00 almost all beam lost, but ID didn't trip. Nobody recognizes this for about 20 minutes when MARK J calls us.

5:00 Order of TOF histograms changed!
New LG - Energy threshold histograms implemented: E_{tot}, B latch 1,2,4
Howard Mills will care that the corresponding ones EC1, EC2 latch 2,3,4
will be displayed on top of each other.

5:15 IBM - link up again
6:00 JDAS error 44 subcode 703 three times then no more.

8:00 Kobayashi and Hellenbrand on shift
10:40 NORD crash, digits 09, after 72 events of RUN 10462
reloaded NORD
10148 start RUN 10463
19:30 New fill ready
12:00 $L = 8.04 \times 10^{30}$ at 2x 11 mA, this is too low, we complained at PkR, they try to improve
12:03 ID trip, due to partial beam loss
12:05 JDAS Error 44, 704, RUN 10644 stopped
" " , RUN 10645 stopped
RUN 10646 runs

14[50] Histogram display altered to correspond with PDi's changes. Unfortunately a bug+ has crept in causing double traces in most histograms
16:0 New Luminosity record 182,3 nb^{-1}/shift with 75° multi hadron
16:00 Krehbiel & Darrell on shift.
17:40 IBM Error 54 Sub 14 0000. We called IBM. Finally we got them to investigate
Meanwhile HEM reloads ~~Nord~~ ZDAS to remove the bug.
They (IBM) acknowledge that the error is theirs and investigate. We decide not to write on tape since only 5 ~~left~~ min. left until agreed-on beam-dump
17:50 Histogram display now believed OK. Decided not to write to tape since new fill imminent.
Beams dumped, new fill.
18.17 We continue data-taking. IBM now ok.
18.45 Several (permanent) JDAS errors 44/704. (DLB Crate 4 in Branch 7 gives no CAM)
Cure: One of the following things: Switch crate off - on. Unplug Branch Cable and replug it. Tighten Screws of Branch cables in the neighbourhood. Start a new run.
No more errors Maybe some screws ¶ were not properly tightened.
18.47 What a pity. ALL beams lost. Run stopped.
19:16 we should check jet chamber histogram F12 - DLB - TT RATIO - do after at least 4 000 events have been accumulated in the run. (F12, F8, F12)
19:51 we now have a new filling and start run 10656
20:41 we are having several short IBM jams at the moment, each on lasting several seconds
20.57 Beam lost, ID trip, JDAS Error 44

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 red $\times 10^6$	T_1 Acc Sum	T_2 Acc Sum	T_1 b.t 2 $E_1 > 6$ GeV	T_2 b.t 17 $2T \cdot E_4 \cdot 2T_4$	Rejection NSO	Rejection MIP	Rejection TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T2 Rej Ev fr (%)	Bhabha	Hadron	E_{beam}	Remarks
112																											113
10633	13/3/82	0:38	1:52	6.7	7.3	7.5	4232	8002	1101	83	2945	9328	1120	2045	ON	ON	OFF	7.03	29.75	8016.74	IBM	0.5	58%	372	13	17.300	
10634	"	1:53	2:01	6.5	7.2	7.6	480	948	124	95	316	1120	128	203	"	"	"	6.53	3.14	8019.88	"	0.45	60	43	2	"	Beams dumped
10635	"	~~1:25~~	~~1:07~~	11.25	11.07	8.0	1179	2511	307	24	983	2791	364	3464	"	"	OFF	9.8	11.56	8031.44	"	0.78	54	125	8	"	
10636	"	3:18	4:14	10	10	6.6	3349	5918	872	57	2512	6471	928	1394	"	"	"	7.8	26.23	8057.67	TAPE FM1431		55	335	8	"	beams lost
10637	"	4:46	5:55	9.4	9.0	~~7.8~~	4130	8002	1074	77.9	3259	9014	1221	2025	"	"	"	8.21	33.90	8091.57	FM193	0.75	56	392	12	"	
10638	"	5:55	7:18	9.43	9.08	~~8.03~~ 8.01	4979	8002	1295	79	3223	9183	1190	1758	"	"	"	7.0	34.61	8126.18	IBM	0.59	56	392	12	"	
10639	"	7:19	7:23	7.8	7.4	4.9	214	311											1.21	8127.39	"			15	1	"	
10640	"	8:12	9:18	9.5	9.5	7.6	3964	8002	1031	78	3188	8924	1179	1998	ON	ON	off	8.85	35.10	8164.49	IBM	0.73	55	384	17	17.300	
10641	"	9:18	10:38	7.5	7.9	6.3	4771	8002	1241	78	3315	9186	1224	1738	"	"	"	7.37	35.17	8199.66	"	0.58	57	417	77	"	
10642	"	~~10:38~~	~~11:05~~	~~7.4~~	~~7.4~~	~~5.5~~	~~948~~	72													"						RUN summary lost NORD crash
10643	"	10:48	11:05	7.4	7.4	5.5	968	1489	251	13	608	1739	225	315	"	"	"	6.07	5.88	8205.54	"	0.46	58	67	4	"	
10644	"	11:37	12:03	10.2	10.9	11.3	1558	3557	405	45	1276	4301	485	1036	"	"	"	8.09	12.61	8212.15	"	0.8	57	156	1	"	
10645	"		no events												"	"	"										
10646	"	12:09	13:19	8.3	9.2	7.2	4178	8002	1087	78	3031	9373	1139	2089	"	"	"	7.24	30.25	8248.40	"	0.6	56	331	13	"	
10647	"	13:20	14:15	7.3	8.0	6.3	3300	5796	858	54	2370	6424	887	1323	"	"	"	7.32	24.76	8272.56	"	0.5	55	290	7	"	beams dumped
10648	"	~~14:43~~	15:53	9.4	9.2	7.4	4150	8002	1079	80	3276	9188	1171	2138	"	"	"	8.56	35.52	8318.08	"	0.7	57	358	15	"	
10649	"	15:54	17:13	7.6	7.6	6.6	4717	8002	1228	81	3309	9042	1221	1851	ON	ON	OFF	7.71	36.36	8354.44	"	0.5	55	407	10	17.300	
10650	"	17:13	17:41	7.1	7.1	5.3	1643	2530	427	22.5	1080	2692	410	478	"	"	"	6.53	10.74	8365.18	"	0.45	54	144	3	—	Run stopped due to IBM error
10652	"	18.18	18.52	10.96	11.24	14.1	1718	3206	447	62,9	1292	3852	464	875	ON	ON	OFF	8.40	14.42	8379.60	IBM	0.75	59	151	8	17.300	By some reason Run No in summary went to 10652
10653	"	18.54	18.58	9.5	10.1	13.7	200	438	52	7,1	760	434	61	727	"	"	"	8.11	1.62	8381.22	"	?	49	76	0	"	Beams lost
10654	"	19:52	20.58	~~11.8~~	~~10.4~~	7.0	3934	7457	1023	71	3058	8291	1129	1801													
10655	"	21:49	21:53	11.6	10.5	7.2	203	434	53	3.8	173	431	57	485	ON	ON	OFF	8.75	34.44	8415,66	"	0.78	56	403	15	"	Beams Lost
10656	14/3/82	0:05	1:08	9.5	9.5	7.2	3627	7025	944	68	3031	7646	1055	1738	"	"	"	9.85	35.71	8453.38	"	0.7	56	390	10	"	beams lost
10657	"	1:57	2:59	9.5	9.6	8.7	3720	8002	968	84	3323	8997	1199	2217	"	"	"	10.28	38.26	8491.64	"	0.75	56	429	13	"	
10658	"	3:00	4:12	7.9	7.9	6.8	4347	8002	1131	76.5	3415	8823	1218	1874	"	"	"	9.12	39.66	8531.30	"	0.46	56	452	19	"	
10659		4:12		7.6	7.6	5.9		1430			run summary lost due to NORD hang up									?	"	0.45				"	beams lost
10660	"	5:21	6:27	9.5	9.5	8.1	3943	8002	1026	83	3312	8846	1238	2090	"	"	"	9.34	36.84	8568.14	"	0.75	56	491	22	"	
10661	"	6:28	7:47	7.8	7.9	6.3	4724	8002	1229	77	3478	8761	1279	1754	"	"	"	8.12	38.34	8606.48	"	0.6	56	471	14	"	
10662	"	7.48	8.00	7.6	7.6	6.1	718	1177	187	11	513	1257	192	249	"	"	"	7.10	5.10	8611.58	"	0.45	55	69	2	"	beams lost
10663	"	~~9.27~~ 10.27	~~11.44~~ 11.40	9.2	8.4	7.0	4392	8002	1143	80	3358	8810	1250	1877	"	"	"	8.58	37.69	8649.27	"	0.63	56	452	7	"	
10664	"	11.41	11.48	9.0	8.2	7.1	419	809	109	7.7	321	910	123	248	"	"	"	8.06	3.38	8652.65	"		~~57~~	44	0	"	
10665		not existing																			FM1426 TAPE E1	0.65				"	errs 0...1000: wrong energy (should be 17.3 GeV)
10666	14/3/82	11.56	13.11	7.8	8.6	6.9	4449	8000	1157	80.2	3080	9700	1113	2436	ON	ON	OFF	7.19	31.98	8684.63		0.55	57	387	24	17.300	
10667	"	13.17	14.02	6.5	6.0	7.1	3041	5275	790	56.1	1897	6939	677	1584	ON	ON	OFF	6.20	18.85	8703.48	IBM	0.50	58	208	8	17.300	beams dumped
																				35.07				8259+287=	33.46		
																				8739.05							

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 red $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bid 2 $E_\gamma > 6$ GeV	T_2 Bid 17 $2T \cdot E_\gamma \cdot 2\tau$	Refection NSO	Refection MIP	Refection TOF	$\langle L \rangle$ $\times 10^{30}$	$\int$ Ldt Run	$\int$ Ldt Exp	IBM TAPE	BP [V]	T2 Rej. Ev. $\tau\tau$ (%)	Bhab.	MH	E_{beam}	Remarks

13.3.82

21:44 new filling ready, run 10655 started.

21.52 Beams lost again. ID trip. Colour display notes: JETCH HI CURR, Faulty Part 96 "Short break" on TV

22:06 we start to wind the magnet down. Sarau at Petra says: Cavity Vacuum Safety Trip for the 4. time. They have to do something serious about it. Cannot say how long - - - Possibly a leak or something gassing out.

23:31 The Petra magnets are now on and injection in attempted. we switch on our magnet again.

14/3/82

0:00 Rowe, Meier

1:08 beams lost

2:03 error in Tag-HV system (HTr. 63) : no LAM found (HV read error)

2:33 same HV - Read error
HV on 8 hists OK, but unable to be read for checking purposes.

4:10 HV read error occurs now in 30 min distances, but all HV's are physically there -> we accept this error for the time being

4:26 beams lost + NORD 10 hang up on Level 09 -> run summary 10628 sg Lost
(TOF HIPROC's have been switched off after reloading NORD)

4:45 CAMAC modules for the HV-read checked, no obvious error found

5:50 HV-read problem has disappeared

6:15 Standard hists taken. OK

8:00 Minowa, Bethke on shift
"short break". PKR has lost the magnet currents

10:05 Beams back.

10:25 Optimization finished.

New Tektronix adjusted for better hardcopy (HEN)

10:50 IBM-error, no data transferring. Write on tape woes, Run 10666
IBM-people say, all things should be ok. Probably error at F58, but nobody is working there on sunday !! Tasso + Plato have the same problems.
We write on tape, but notice: evts 0 ... ~1000 have a wrong energy-information,

because → hold the NORD 0.0173 GeV instead of 17.3 GeV.
(No information is coming from IBM, currents + energy put in by hand)

12:10 Muon digitizer missing 138.
accept error and wait.

16:00 Barthel & Glendinning on shift

16:17 ID trip for unknown reason could be small Petra instability

18:00 After run summary it was noticed on the colour TV that events to IBM were 0. However everything else looked normal IBM was connected and up. Could be the display pgm. was screwed but the data were sent to IBM. OR Glendinning used BSEND during the run. Could that trigger the IBM-transfer? We will not use it anymore during this shift.

This is a peculiarity of the display pgm.

19:00 new run, new file IBM-transfer looks ok

19:50 Std.-histograms for run # 10671
a) 4 spikes in ring #1 of jet chamber. They are new but not frightening
b) 2 spikes at 9 in the first binning bin in ring #1. They could be related to the spikes in the hist maps. In expert of the next shift should look at it

20:22 JDAS ERROR 44 nberror 302 ~~possibly~~, no events - no triggers.
paused the run then got JDAS error 45 nberror 1
continued the run and it worked.

21:00 Error #4 of YSPY appeared. Muon digitizer # 40 missing.
According to expert it is not serious. continue running

21.24 NORD - breakdown
N-10 continue on Level 3
nothing works no they has any effect.
Reload NORD.
Runsummary of Run #10672 ~ 7600 evts. lost

21:30 Muon crate #2 went missing (I thought this had been fixed) had to rent in hardware room.

23:12 Trigger 3 input missing ST 29 SP 2 — wrong - its in there (T3 ZIP is from Muon Filter!)
We don't know what that means. It seems that somebody took the YSPY-description out of the JDAS-folder. OR does this description not yet exist ??
The trigger 3 histograms Input and output look normal

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 rej $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 $E_\gamma > 6$ GeV	T_2 Bit 17 $2T \cdot E_\gamma \cdot 2\tau$	NSO	MIP	TOF	$\langle L \rangle$ $\times 10^{30}$	SLdt Run	SLdt Exp	IBM Tape	BP [V]	T_2 rej. ev. Fr (%)	Bhabha	MH	E_{beam}	Remarks
10668	14/3/82	14:53	16:10	8.0	9.1	6.4	4614	8002	1200	77	3327	8846	1251	9871	ON	OFF	OFF	7.60	35.07	8739.05	IBM	0.75	55	454	14	17.300	
10669	"	16:11	17:32	6.5	7.5	5.7	4447	8002	1286	73	3351	8834	1304	8888	"	"	"	6.78	33.54	8772.59	"	~0.5	56	392	14	"	
10670	"	17:38	18:01	6.2	7.1	5.3	1366	2066	356	14	874	2202	335	2146	"	"	"	6.43	8.78	8781.37	"	0.45	54	124	0	"	beams dumped
10671	"	19:03	20:10	9.2	9.6	7.9	3908	8002	1017	79	3313	9095	1245	2168	"	"	"	9.44	36.90	8818.20	"	0.70	56	475	10	"	~~Start~~
10672		20:10	21:24					~7600											~34	8852.20	"	0.55					summary lost
10673	"	21:31	21:33	7.5	7.8	5.8	97	157	25	15	74	145	25	175	"	ON	ON	8.73	0.85	8853.05	"	0.45	57	7	0	"	"
10674	"	21:34	22:16	6.7	7.0	5.5	2552	3975	664	37	1727	4348	647	4179	"	~~OFF~~	OFF	7.31	18.65	8871.70	"	0.45	55	241	6	"	beams dumped
10675	"	22:40	23:46	9.3	9.4	7.5	3984	8002	1036	81	3255	8903	1225	10609?	"	"	"	9.12	36.34	8908.04	"	0.80	56	435	10	"	
10676	"	23:47	1:03	7.6	7.8	6.5	4559	8002	1186	77	3317	8802	1172	1798	"	"	"	7.96	36.30	8944.34	"	0.60	55	413	11	"	
10677	15/3/82	1:03	2:17	6.4	6.6	5.3	4368	6476	1136	60	2700	7354	1035	1312	"	"	"	6.59	28.79	8973.13	"	0.50	57	342	7	"	beams dumped
10678	"	3:22	4:32	9.4	8.9	7.3	4160	8002	1082	79	3354	8739	~~1259~~ 1205	1940	ON	ON	OFF	8.65	35.97	9009.10	"	0.70	55	457	20	4	
10679	"	4:32	5:53	7.9	7.4	6.1	4878	8002	1268	77	3341	9023		1801	"	"	"	7.25	35.34	9044.44	"	.60	56	415	12	"	
10680	"	5:53	6:06	7.5	7.1	5.6	688	1102	179	10	473	1190	187	223	ON	ON	OFF	6.53	4.50	9048.94	FM 127 TAPE	0.49	52	61	8	4	
10683	"	6:10	6:31	7.1	6.7	5.4	~~1263~~ 1214	1914	328	17	793	2162	302	392	"	"	"	6.41	8.09	9057.03	"	.45	56	111	3	4	beams dumped
10684	"	7:01	7:19	10.9	10.4	8.3	738	1597	191	15	642	1733	248	411	ON	~~ON~~	OFF	10.08	7.44	9064.47	FM 127 TAPE	.75	55	79	7	"	
10685	"	7:19	7:21	10.8	10.4	8.8	49	191	12	1	78	116	40	51	"	"	"	8.99	0.44	9064.91	IBM FM1092 TAPE	.70 .69	~~30~~	14	0	"	IBM Link error beams + Run-summary lost
10686	"	7:22																									
10687	"	~~8:48~~	~~8:49~~	10.9	11.5	7.7	55	135	14	1	51	120	17	31	ON	~~OFF~~	OFF	10.01	0.55	9065.46	IBM FM109 TAPE	.70	55	5	0	"	IBM Link error
10688	"	8:54	10:03	10.5	11.0	7.1	4137	8002	1077	77	3403	8806	1279	1978	ON	ON	OFF	9.38	38.79	9104.25		.6	56	465	16	"	
10689	"	11:35	12:02	8.6	9.3	5.4	1598	2394	416	22	1038	2626	427	451	ON	ON	OFF	6.64	10.61	9114.86	IBM	.55	56	148	7	"	Nord crashed Run Summary lost Run 10689
10690	"	12:09	13:29	—	—	5.6	4760	6732	1239	70	2647	7895	912	1597	ON	ON	OFF	4.81	22.89	9137.75	IBM	—	57	278	6	"	beam lost
10692	"	14:45	15:52	9.0	9.4	7.6	3992	8002	1039	79	3310	8943	1243	2145	ON	ON	OFF	9.37	37.41	9175.16	IBM	.9	56	467	18	"	
10693	"	15:52	17:13	6.9	7.2	5.9	4803	8002	1250	74	3349	8913	1217	1774	on	on	off	7.64	36.68	9211.84	"	.57	55	472	17	"	
10694	"	17:13	17:53	6.1	6.4	5.1	2307	3360	600	30	1427	3749	546	689	ON	ON	off	6.26	14.44	9226.28	"	.42	56	188	3	"	Beams dumped
10695	"	18:56	20:07	8.2	8.7	7.2	4220	8002	1099	~~79~~	3298	9109	1229	2131	ON	ON	off	8.72	36.80	9263.08	IBM	0.7	56	425	11	"	
10696	"	20:07	21:32	6.2	6.5	5.5	5088	8002	1324	72	3358	8770	1275	1620	ON	ON	off	6.78	34.50	9297.58	IBM	0.5	54	406	15	"	
10697	"	21:33	21:34	6.2	6.5	5.5	38	64							"	"	"	4.89	0.19	9297.77	"	0.4	60	2	0	"	beams dumped
10698	"	21:57	23:02	8.7	8.8	7.8	3892	8002	1073	79	3302	8878	7322	7948	on	on	off	9.01	35.08	9332.85	IBM	0.65	56	449	15	17.300	
10699	"	23:01	0:26	~~8.8~~ 6.6	6.6	5.6	5035	8002	1310	339	3408	8889	1279	1718	ON	ON	OFF	6.97	35.09	9367.94	"	0.53	56	462	7	"	
10700	16/3/82	0:27	1:01	6.0	6.0	4.6	2069	2824	538	24.8	1205	3122	429	543	ON	ON	OFF	5.98	12.38	9380.32	"	0.40	54	148	3	"	Beams dumped
10701	"	1:30		11.4	11.3																	0.75					Nord crashed. Runsummary lost
10702	"	1:38	1:43	10.9	10.9	7.8	244	520	64	4.9	214	545	82	149	ON	ON	OFF	10.11	2.47	9382.79	"	0.70	57	26	0	"	IBM Link error
10703	"																										
10704	"	1:54	3:09	7.9	8.1	6.5	4478	8000	1166	76.1	3386	8865	1288	1843	ON	ON	OFF	7.95	35.61	9418.40	FM 129	0.65	56	457	22	"	3364 + 229 = 3596

Run	Date	Start	Stop	I_+ (at Run start)	I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	To red $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 $E_\gamma > 6$ GeV	T_2 Bit 17 $2T \cdot E_\gamma \cdot 2\tau$	Reflection NSD	MIP	TOF	$\langle L \rangle$ $\times 10^{30}$	Sl dt Run	Sl dt Exp	IBM TAPE	BP [V]	T2 Rej. Ev. T_2 (%)	Bhab.	MH	E_{beam}	Remarks

15/3/82 0^{00} Bethke & Takeda on shift

4^{00} Bethke goes, Heuer comes

4^{30} Std histograms checked, OK

6^{00} IBM error 54 ; IBM says, everything ok., telegram from PETRA gets updated we decide to write on tape for the rest of this filling (→ 6.36). PLUTO has the same error-memory. IBM error 54 comes and goes

7^{00} New fill ready, IBM error 54 still present → continue to write on tape

7^{28} beams lost, Nord hang up ; Continue light on, but stuck on level 9 + ID-trip

7^{35} Nord up again, write TEOF on tape, turn A99 off

8^{00} Yamada & Konamiya on shift.

8:45 Phone Dilp / Rothweiler They are aware of the link problems and they are working on the link. They will phone us as soon as the link is up again.

11^{27} Nord crashes.

DATA 13, 9
PROTECT RING 2
LEVEL ⊕
LEVEL = 9

} are ON

12^{00} PKR says they have some difficulties in the positron injector, and that they want to continue this filling (beam) as long as possible

13^{28} Beams ~~lost~~ dor lost

16:00 Dietrich & Kellenbrand

18.50 Kuhlen as visitor complains at PETRA for low beam lifetimes (after new filling.) They were bad for the previous filling as well. PETRA says they ~~resp~~ acknowledge the problem and are working on orbit corrections and really lifetimes seem to go up. 19.00: 4.28 hrs for e^+, 3.43 hrs for e^-

19:00 Luminosity record / shift just missed

16/3/82 0^{00} Nozaki & Kanzaki on shift.

1^{00} Beams dumped.

1^{30} New filling. Start run 18701.

But just after that, Nord crashes. CONTINUE ON.

DATA 13, 9 (ON)
Protect ring 2 (ON)
LEVEL ⊕, 09. → reload N10.

Run 18701 has only about 25 events.

1^{43} IBM Link problem. Stop. run 10702. ~~Error~~ Error 53.

1^{53} PDP problem (PLUTO)(?). Start run 10704 with Magtape output.

3^{59} Beams lost.

3^{23} New filling.

6^{05} Beams lost

6^{27} New filling.

800 Wrieat + Minowa on shift

There will be access at 10^{00} on request of Pluto.
They have a vacuum leak and a broken chamber.
The man on shift at Pluto did not know for how long the access will be. May be 8 hours.

8:56 IDAS Error 44, Interrupt 703

Briefge from PLUTO informed us that the access-time will start at 9:30 (for about 8 hours).

9:30 ~~Stop~~ run & run down magnet to 500 A — magnet current cannot be lowered below ~2250 A (computer not by hand)

9:30 Access time. restart 16:00. call K-people.

14:30 K-people fixed the magnet problem.

16:00 Kawabata, Heier

During the afternoon, the system disc drive developed a fault. After tests, the disc was transferred to the spare drive and it works OK. We hope that FSS will examine the drive at some time. (HER)

17:30 Magnet switched on

18.02 Run 10711 stopped, NORD 10 stopped because FSS thinks that the broken disc-drive should be disconnected.

19.16 Beams lost, IO-Alarm

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 rej $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 B1,2 $E_4 > 6$ GeV	T_2 B17 $2T \cdot E_4 \cdot 2T_r$	NSD	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 (%)	Bhab.	MH	E_{beam}	Remarks
10705	16/3/82	3:09	3:59	7.9	8.1	5.5	2937	4642	364	41.7	1949	5145	695	966	ON	ON	OFF	7.21	21.16	9439.56	IBM	0.80	55	252	6	17.300	Beams lost
10706	"	4:25	5:34	8.8	9.0	7.3	4106	8002	1068	78.2	3393	8872	1327	1998	ON	ON	OFF	8.99	36.90	9476.46	"	0.72	56	463	12	"	
10707	"	5:34	6:06			6.5	1902	3435	495	32.0	1465	3789	549	830	ON	ON	OFF	8.50	16.17	9492.63	"	0.52	56	181	5	"	Beams lost
10708	"	6:30	7:36	8.8	9.0	7.7	3976	8002	1035	79.9	3202	9294	1252	2112	ON	ON	OFF	8.06	32.06	9524.69	"	0.73	57	407	16	"	
10709	"	7:37	9:01	6.8	6.9	5.9	5014	8002	1305	77.5	3239	9417	1248	1795	ON	ON	OFF	6.37	31.93	9556.62	"	0.55	56	381	13	"	
10710	"	9:01	9:32	6.3	6.4	4.8	1850	2387	481	22.9	1005	2606	335	492	"	"	OFF	5.03	9.31	9565.93	"	0.37	57	104	2	"	beams dumped
10711	"	18:06	18:10	11.8	11.8	10.3	253	623	66	6.8	260	713	100	205	"	"	"	11.10	2.81	9568.74	"	0.8	59	45	0	"	beams lost
10712	"	19:09	19:15	11.6	11.6	10.3	347	815	90	8.3	337	920	133	271	ON	ON	OFF	11.49	3.39	9572.73	"	0.77	56	55	1	"	ID trip
10713	"	19:18	20:24	9.4	9.5	8.2	3778	8002	984	80.6	3527	8566	1347	2145	"	"	"	11.04	41.73	9614.46	"	0.75	55	537	17	"	
10714	"	20:25	21:41	7.7	7.8	7.2	4450	8002	1159	83.5	3558	8651	1336	1880	"	"	"	9.43	41.95	9656.41	"	0.55	55	505	17	"	
10715	"	21:41	22:17	7.1	7.2	5.7	2117	3371	552	31.2	1525	3589	571	699	"	"	"	8.04	17.02	9673.43	"	0.5	55	212	11	"	beams dumped
10716	"	22:50	23:53	9.5	9.9	8.0	3794	8002	988	79.5	3297	9061	1221	2301	"	"	"	10.16	38.53	9711.96	"	0.8	56	472	14	"	
10717	"	23:54	1:01	8.0	8.3	7.3	4032	7571	1050	76.5	3139	8447	1186	1954	"	"	"	8.55	34.46	9746.42	"	?	56	428	14	"	
10718				not exist because of a trouble with DAS.																		0.5					
10719	17/3/82	1:11	2:17	6.7	7.0	5.7	3926	6282	1022	58.6	2702	6986	937 ~~444~~	1393	"	"	"	7.15	28.08	9774.50	"	0.5	56	318	10	"	Beams dumped.
10720	"	2:46	3:01	11.0	10.7	7.8	815	1676	212	16.6	686	1862	219	440	"	"	"	9.72	7.92	9782.42	"	0.8	57	83	5	"	IBM error
10721	"	3:01	3:01	10.99	10.66																	0.7				"	IBM error – no events recorded
10722	"	3:18	4:31	8.6	8.5	9.1	4101	8002	1068	97.3	3309	9015	1267	2125	"	"	"	9.21	37.77	9820.19	"	0.65	56	483	18	"	
10723	"	4:31	~~5:53~~ 5:53	~~7.1~~ 7.1	~~7.5~~ 7.0	6.6 ~~9.0~~	4841	8002	1259	77.1	3484	8873	1349	1762	"	"	"	8.02	38.85	9859.04	"	0.55	56	498	9	"	
10724	"	5:53	6:03	6.9	6.8	5.3	604	884	157	8.3	389	942	150	967	"	"	"	7.02	4.24	9863.28	"	0.5	56	54	3	"	Beams dumped
10725	"	07.51	08.30	10.2	10.4	10.7	2313	5094	602	64.7	537	5705	791	1477	ON	ON	OFF	9.92	22.94	9886.22	"	0.7	56	319	6	"	BEAMS LOST.
10726	"	11 31	11:56	11.9	11.5	9.0	1384	3780	360	32	1263	3444	464	890	"	"	"	10.75	14.89	9901.10	"	0.82	47	171	8	"	Beam lost.
10727	"	12 53	13:23	10.2	11.2	9.1	1788	5116	465	42	1589	4693	560	1277	"	"	"	8.92	15.94	9917.04	"	0.76	26%	199	5	"	
10728	Dummy		FAILED	AFTER		RESETTA	SETTING.															0.60					
10729	"	13:34	14:04	9.1	10.1	8.3	1903	4480	469	39	1419	4421	512	1095	"	"	"	8.15	14.69	9931.73	"	0.60	37%	157	8	"	
10730	"	14 14	15 24	7.4	8.3	6.7	4167	8002	1085	72	1013	8450	1067	1811	ON	ON	OFF	7.61	31.71	9963.44	"	0.55	47%	387	8	"	
10731	"	15 24	15 44	7.1	8.0	8.8	1105	1939	288	25.3	262.5	1863	268	345	ON	ON	OFF	6.78	7.50	9970.44	"	0.5	42%	87	1	"	
10732	"	15 44	15 52	7.0	7.9	5.4	378	697	98.5	5.85	92.7	664	78	134	ON	ON	OFF	6.68	2.53	9973.47	"	0.48	42%	26	3	"	BEAM DUMPED.
10733	"	17:18	18:26	9.3	9.5	9.8	4019	8002	1045	81	3270	8991	1227	2148	ON	ON	OFF	8.82	35.45	10008.92	"	0.80	55%	448	14	17.300	
10734	"	18:25	18:36	9.3	9.5	7.5	646	1245	167	12	498	1418	194	309	"	"	"	8.57	5.~~60~~ 53	10014.45	"	0.62	56%	74	3	"	
10735	10738																										~~FAILED~~ Dummy run
10739	"	19:10	20:03	9.3	9.6	9.2	2461	4144	640	46	1670	4430	626	868	ON	ON	OFF	9.13	19.56	10032.01	"	~~0.5~~	51	231	7	"	Beams dumped
10740	"	20:26	21:19	9.7	10.0	8.6	3086	6505	803	68	2628	7517	952	1859	ON	ON	OFF	9.72	29.99	10062.00	"	0.83	56	297	8	"	Beams lost
10741	"	22:27	23:29	9.8	9.8	8.5	3700	8002	962	82	3394	8743	1228	2200	ON	ON	OFF	10.36	38.34	10100.34	"	0.80	55	461	14	"	
																								3596+258=3854			

Run	Date	Start	Stop	I_+ (at Run start)	I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 rej $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bid 2 $E_\gamma > 6$ GeV	T_2 Bid 17 $2T \cdot E_\gamma \cdot 2\pi$	Rejection NSD	MIP	TOF	$\langle L \rangle \times 10^{30}$	$\int$ Ldt Run	$\int$ Ldt Exp	IBM TAPE	BP [V]	T2 Rej Ev Tr (%)	Bhab.	MH	E_{beam}	Remarks

18.17 The trouble with the disk-drive is caused by a broken fuse. It will be exchanged soon.
18.25 Disks are o.k. now, NORD 10 restarted
19.20 YSPY detects missing T3 I/P as in some shifts before

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0:00 Rowe & Odaka on shift. "NO TRIGGERS" is not a reason for RELOADING JDAS! What really happened? (IF TV SAYS NO TRIGGERS then JDAS is working OK)
1:10 No trigger → We reloaded JDAS, after terminated Run 10717.
2:15 Beams dumped.
2:38 New Fill
2:58 ID-tripp (Anord Current)
restart data-taking, but IBM-link error occured. IBM is in trouble.
3:17 The trouble with IBM was resolved. → started Run 10722
4:00 JDAS ERROR 44 - 704
4:05 " very frequently.
:08 " disappeared after some touches on the crate.
6:03 Beams dumped.
7:50 New Fill
08:00 Petersen & Hedgcock on shift.
08:07 JDAS ERROR 44 - 704 - LAM bytes & calles loaded again. -*???*
08:30 ID Trip - then all beam lost. Run summary OK.
08:45 - Command KURZE UNTERBRECHUNG appears on the screen.
09:20 Tried to change an RT program and they all disappeared. Had to try a)HENY reload. All OK now.
11:31 Run 10726 started.
Muon crate missing but 11 appears frequently on TV screen
11:45 DL8 146 give no response (& 123, 224). SPY strikes again!
11:55 ID Trip and beams lost
12:51 Run 10727 started. R.D. Heuer has replaced two DL8's.

12:45 Several other problems with DL8's. The temperature in the electronics part is too high. If I ~~would be~~ were a DL8, I would also stop working. The compressors are on "Störung". Phone Hauptzentrale.
13:20 JDAS ERROR 44 - 502 for several times; I switched off the DL8 and started the run
SPY claims DL8 63 no hits. Richard H. fixes it. PAUSE/CONTINUE AND SHAKE CABLES OFTEN !!!! xxx!!
15:45 HOLE IN ID WIRE MAP AROUND (504). START NEW RUNS AND HOLE REMAINS — 8 WIRES FROM 504 UPWARDS.
16:00 Nozaki & Takeda on shift
16:30 DL8 repaired by cleaning contacts! I think these problems are still due to the summer temperatures at 17 Uhr. → (PRINTED CIRCUIT PLUGS AT REAR OF DL8 RACK).
17:46 New fill ready
18:36 Nord 50 Busy. Reason
Petra 14, 13.3.1.0 km
Protect ring 2
level Ø
level 0 <-> 8
reload NOR10.
18:54 Nord crash again
Petra 13.9, protect ring 2, level Ø, level 9.
reload NOR10.
19:15 JDAS ERROR 56 SUB ERROR 563 TASK 1
19:18 YSPY, DL8 63 no response
Pull the DL8 '63' and push it into the lock. It does not work.
19:28 JDAS ERROR 56 SUBERR 563
19:38 Pull out the DL8 #63 and cleaned the connector in the backhood. It works again.
JDAS ERROR 56 SUBERROR 563
20:37 JDAS ERROR 44 SUBERR D04
21:15 Serious PETRA crash. Beams lost and Energy on TV says Ø.
Magnet problem. Short break.

Run	Date	Start	Stop	I_+ at Run start	I_- at Run start	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 rej $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 $E_\gamma > 6$ GeV	T_2 Bit 17 $2T \cdot E_\gamma \cdot 2\pi$	Rejection NSD	Rejection MIP	Rejection TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T2 Rej Ev $\pi\pi$ (%)	Bhab.	MH	E_{beam}	Remarks

22^{00} The gate width of Barrel Septants was changed to 60 ns from 50 ns. These BS signals have been used for low energy neutral trigger and the gate position was adjusted for low energy signals. In order to accept also high energy signals with 100% efficiency the gate width was broadened. H. Takeda

(Mr. Krehbiel also agreed.)

2226 New fill ready.
JDAS ERROR 44 SUBERROR 703

18.3.82

0^{00} Warming + Komamiya

0^{40} JADAS ERROR 044 - 704. ~200 times.
we take off all the DL8's in the branch 7 - crate 4. → still time out
changed the A-1 crate controller. → "
LAH grader was changed. → "
— the same error had occured 08^{07} yesterday. (p122) —

1^{40} beam dumped.
reload the MIPROC. → it takes too long time → cancel the reloading.
change the crate → it seemed to work., but, after we connected the DL8 cables from V34 : time out again!
Why
we pushed the cable btw. LAH grader and crate controller → seemed to be O.K.
DL8(124) missing for ~2000 events at Run 10744

3^{05} Cable miss connection : DL8 #124 reconnect → O.K.
? : DL8 #119 knocked → O.K.

Muon digitizer missing
0 - 10, 119 - 129
Muon crate missing. 1, 11 reset → O.K.

time out 704 was with us the whole week already!
Now we have killed it hopefully

3^{20} JDAS ERROR 044 - 704 again!
changed DL8 #117

5:46 IBM link problem, cured by trying link again

8:00 Elsen, Finch
JDAS ERROR 44 - 763 once. Hopefully only spurious
9:20 " " 44 - 504 twice
9:30 " " —"— —"—
11:30 Nord hung on level 9
12:25 YRUNSM - the run summary program has been slightly altered. HEP
12:40 There is some smell of hot rubber in the counting house...
We can't locate, it may come in via the air - conditioning.
13:30 Since this morning we have ≈ 1 44-504/20 min
13:35 Timeout on 703.
13:45 wire #1110 is missing in wire maps, mean hits, $A^+ + A^-$. (Run 10754)
14:37 IBM LINK PROBLEM AFTER 10717 stopped 10756 started.
14:44 Beams lost
15:15 wire #1110 still dead (run 10756)

16:00 Matsumura & Kanzaki on shift.
16:30 N16 hung up
Data 13, 9 (ON)
Protect ring 2 (ON)
LEVEL +, 09.
Then reload N16, switch off TOF-MIPROC and start run 10758.
16:36 N16 hung up again!!
→ Just the same as the above problem.
And repeated the "standard" procedure.

18:30 Beams dumped.
19:04 Next filling.
22:20 Beams dumped.
20:49 New filling ready.
23:17 IBM Link problem. (IBM ERROR 53)
trouble with MPX-station; IBM people said, the room, where MPX stands, is locked.
We give them a hint to phone Kontrol Technikers
people from IBM do not know, how to handle MPX

RUN	Date	Start	Stop	I+ (at Run start)	I− (at Run start)	DT (%)	Time (s)	Rec Out	All ×10⁶	T0 rej ×10⁶	T1 ACC Sum	T2 ACC Sum	T1 Bit2 E1>6 GeV	T2 Bit 17 2T.E4 21r	N50 Rejection	MIP Rejection	TOF Rejection	⟨L⟩ ×10³⁰	∫Ldt Run	∫Ldt Exp	IBM TAPE	BP [V]	T2 Rej. Fr. (%)	Bhab.	MH	E beam	Remarks
10742	17/3/82	23:28	0 41	8.2	8.2	7.0	4285	8001	1115	78	3357	8719	1194	~~1917~~ ~~4560~~	ON	ON	OFF	8.60	36.83	10737.27	IBM	0.6	55	415	16	17.300	
10743	18/3/82	0 41	0 46	8.1	8.7	5.6	232	407	60	3	174	407	62	96	ON	ON	OFF	8.17	1.90	10739.07	"	.52	54	22	0	"	JDAS Error time out
10744	"	3 00	3 31	9.9	10.0	8.1	1776	5833	462	38	1464	4009	564	899	ON	OFF	OFF	8.00	14.20	10783.27	"	.6	0	180	5	"	uP16 off
10745	"						1829															.5					⇐ no events (only pedestal events)
10746	"	4 35	5 07	7.4	7.4	6.0	~~4760~~	4889	476	28	1275	3342	438	664	ON	OFF	OFF	6.42	11.75	10795.02	"	.5	0	143	3	"	uP16 off
10747	"	5 30	6 35	12.0	12.2	9.5	3663	8002	953	91	3274	9156	1200	2472	ON	ON	OFF	9.58	35.09	10230.11	"	0.8	58	450	14	17.300	
10748	"	6 35	7 45	9.6	10.0	7.2	4196	8002	1092	79	3452	8939	1250	2055	ON	ON	OFF	8.77	36.82	10266.93	"	0.63	56	452	13	"	
10749	"	7 45	8 21	8.0	8.4	5.9	2155	3575	561	38	1612	3853	584	757	ON	ON	OFF	7.96	17.02	10283.95	"	.50	56	281	2	"	beams dumped
10750	"	9 13	10 21	8.8	8.8	8.1	4000	8002	1071	85	3263	9414	1185	2375	"	"	OFF	8.27	33.08	10317.03	"	.80	57	418	11	"	
10751	"	10 21	11 02	8.7	8.8	7.8	2406	4714	626	49	2022	5152	745	5929	"	"	OFF	8.66	20.84	10337.87	"		56	257	6	"	
10752	"	11 02	11 34					~3000											~R			0.55					Nord level 9 hang.
10753	"	11 34	11 56	7.6	7.7	7.0	1255	2201	327	23	984	2312	389	2350	"	"	OFF	7.66	9.61	10347.48	"		56	130	5	"	Beams disappear
10754	"	12 29	13 28	9.5	9.7	8.9	3580	8002	932	83	3327	8899	1220	2278	"	"	OFF	10.16	36.36	10383.84	"	0.85	56	444	12	"	
10755	"	13.29	14.32	8.03	8.21	8.6	3769	7212	981	44	3094	7926	1165	1892	"	"	OFF	8.97	33.80	10417.64	"	0.65	56	377	9	"	
10756	"	14.34	14.45	8.0	8.19	6.4	607	1111	158	10	474	1155	182	275	"	"	OFF	8.08	4.90	10422.54	"	.85	54	68	5	"	Beams dumped
10757	"	15:33						~6500							"	"	"				"	0.78				"	XH16 hang up. Run summary lost
10758	"	16:34						~250							"	"	"				"	0.58				"	" "
10759	"	16:43	17:59	7.4	7.73	6.8	4580	8002	1191	81	3437	8796	1238	1861	"	"	"	8.14	37.30	10459.84	"	0.58	55	462	15	"	
10760	"	18:00	18:33	7.68	7.2	5.7	1986	3180	516	29.5	1406	3492	483	696	"	"	"	7.43	14.76	10474.60	"	0.45	56	169	3	"	Beams dumped
10761	"	19:05	20:11	11.1	11.0	7.7	3977	8002	1035	80.1	3376	8801	1225	2024	ON	ON	OFF	9.21	36.62	10511.22	"	0.73	58	437	21	17.300	
~~10762~~	~~"~~	~~20:12~~	~~21:28~~	~~8.9~~	~~9.1~~	~~6.2~~	~~4559~~	~~8002~~	~~1186~~	~~73.5~~	~~3501~~	~~8696~~	~~1284~~	~~1687~~	"	"	"	8.32	37.93	10548.15	"	0.54	56	487	17	"	mistake!
10763	"	21:28	22:22	7.33	7.55	5.3	3212	5022	835	44	2272	5369	875	945	on	on	off	7.33	23.54	10571.69	"	0.4	56	299	8	"	beams dumped
10764	"	22:52	23:18	11.99	11.56	8.2	1538	3319	400	32.8	1368	3666	494	1003	ON	ON	OFF	9.55	14.69	10586.38	"	0.75	56	164	8	"	
10765	} without data																										} IBM trouble
10766																											
10767		23:28	23:54	10.59	10.51	7.5	1542	4020	401	30	1350	3369	503	848	ON	~~OFF~~ ON	OFF	9.34	14.40	10600.78	F11 220	0.6	~~829~~	192	6	"	
10768	~~19~~ 18/3/82	23:54	0:01	9.24	9.23	10.5	277	567	7	7	239	547	83	137	"	OFF	OFF	9.02	2.50	10603.28	IBM	0.6	49	32	2	"	
10769	"	0:03	0:08	9.13	9.13	20.4	~~448~~	308	38	8	138	282	46	76	"	"	"	8.72	1.29	10604.57	"	0.6	50	19	1	"	
10770	"	0:10	01:17	7.69	7.75	6.3	3996	6967	1040	65.4	3099	7462	1183	1599	ON	OFF	OFF	8.07	32.23	10636.80	IBM	0.55	56	374	16	"	stopped after IBM link problem.
10771	"	01:20	02:02	7.00	7.06	5.4	2482	3836	646	35.2	1713	4201	653	755	"	"	"	7.19	17.85	10654.65	"	0.5	56	229	8	"	beams dumped
10772	"	3:07	4:12	9.24	9.52	7.9	3869	8002	1007	79	3326	8936	1180	2324	"	"	"	9.23	35.72	10690.37	"	0.75	55	412	e1	"	
10773	"	4:13	5:29	7.68	7.95	6.9	4598	8002	1196	82.4	3387	8833	1176	1910	"	"	"	7.47	36.64	10727.01	"	0.60	55	456	8	"	
10774	"	05:30	06:18	6.9	7.15	6.4	2852	4452	742	47.7	1885	4903	659	974	"	"	"	6.76	19.29	10746.30	"	0.5	55	244	7	"	beams dumped
10775	"	06:48	07:50	9.4	9.98	8.5	3723	7823	968	82	3151	8939	1150	2291	"	"	"	9.19	34.22	10780.52	"	.75	57	405	11	"	beams lost
10776	"	8.40	9:24	11.67	11.11	8.8	2577	5737	670	59	2413	6280	844	1632	"	"	"	10.09	26.01	10806.53	"	.75	~~371~~ 55	311	11	"	beam Lost
																							384 + 264 = 418				

Run	Date	Start	Stop	I_+ at Run start	I_- at Run start	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 rej $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 $E_\gamma > 6$ GeV	T_2 Bit 17 $2T \cdot E_\gamma \cdot 2\pi$	Rejection NSO	Rejection MIP	Rejection TOF	$\langle L \rangle$ $\times 10^{30}$	$\int$ Ldt Run	$\int$ Ldt Exp	IBM TAPE	BP [V]	T2 Rej Ev π^+ (%)	Bhab.	MH	E_{beam}	Remarks

23:28 Meanwhile we write to tape F11 220 RUN 10767
first 2700 events of RUN 10767 without MIPROC-Reduction

23:55 IBM ONLINE COMPUTER UP ! Stop run 10767 and start 10768 with writing data to IBM.

19/3/82

0:00 Ball & Barthel

0:10 Run 10770 started.

01:20 IBM link problem (transf error 54). Run 10770 stopped. After almost persuading us to write to tape, the link suddenly came back to life. Run 10771 started.

01:44 Mark-I request new fill for 02:00. We agree.

02:00 Beams dumped. end of run 10771.

03:06 New fill ready. start run 10772

04:13 start run 10773.
several timeouts, and error 504. (DR's again)

05:30 start run 10774.

05:58 Mark I ask for new fill at 06:15. We agree.

06:15 End run 10774. Dump beams.

07:49 ID trip due to beam loss

08:00 Bowdery, Meier

09:23 Beams lost suddenly. No 10 alarm. PKR haven't noticed yet (Beam loss + 30 seconds) !
Senderausfall
PKR say that there will be no further beam until 10:45.

10:10 Someone from K-Group comes to fix our magnet, BUT there was no problem! Apparently they received a message from someone but it wasn't us! One of life's unsolved mysteries.

11:00 magnet switched on again

11:37 WORD 10 hang-up. It had stopped.
Level + 3 on
Protect Ring 3 on
run summary 10777 lost

11:50 TOF-bank wrong length (JDAS error 56) appears very often now. Length is 556, 553, ... words instead of 421 words which is the expected value according to the JDAS-Folder. The TOF histograms show no deviations from the normal behaviour.

12:15 some LG ~~HV~~ high-voltages are wrong, but no big differences

12:18 IBM-AA is down, run stopped, Hönkemeyer promised to restart AA as soon as possible

12:30 reset LG-high voltages according to description
in "JDAS-Folder (Programs R1-HB)

14:05 Event display new version installed. This should not look any different, but has a better, more efficient event reformatter and checker. This reduces space requirements. (HEN)

N50 mat busy - STOPped run, ABORT-N50

Memory out of range at 156023
LDR 54, 0013, 10, 00, I
Arithmetic overflow

15.01 IBM-link not possible, run stopped, IBM-data taking program will be reloaded to BB, run 10782 is written to tape

16:00 Finch & Kobayashi

17:06 Beams dumped

19:07 New fill ready

20:09 10781 and 10776 start

20:40 HV many messages (Tagging L6)

20:58 HV wrong again - Rang Wriedt (he was out.) Attempted to re-set by hand - voltage stayed on at ~~0~~ 0.047 kV
wait for an expert!

21:12 HV again

21:54 " "

22:25 " "

22:32 Beams dumped.

22:56 HV again (& New fill)

23:27 " "

20/3/1982

00:00 Olsen & Holdcroft arrive.

00:20 Changed HV module on RACK 63 for channel 29. Fault still persists. H. Wriedt called and he will investigate at some point when he is a shift.

3:20 Tagging LG-hit map shows new zero-channel #27 ⊛ in addition to ~~#63~~ #58.

03:40 I decided and changed another quad module since I suspect the first one I changed was incorrect. The HV fault did not recur at start of run but the fault on 27 appeared at/a round the same Time.
⊛ that is #26 (we start counting with #0). Reason: The opposite block, #58 is dead (and it is on outer block anyway) ∴ many low rates

Run	Date	Start	Stop	I+ (at Run start)	I− (at Run start)	DT (%)	Time (s)	Rec out	All ×10⁶	T0 reg ×10⁶	T1 Acc Sum	T2 Acc Sum	T1 Bit 2 Eγ > 6 GeV	T2 Bit 17 2T·E·2π	Rejection NSO	Rejection MIP	Rejection TOF	⟨L⟩ ×10³⁰	∫L dt Run	∫L dt Exp	IBM TAPE	BP [V]	T2 Rej Ev π+ (%)	Bhab.	MH	E beam	Remarks
10777	19/3/82																									17.300	run summary lost
10778	"	11:45	12:20	9.76	8.64	8.9	2101	4102	547	49	1699	4728	602	1157	ON	ON	OFF	8.73	18.34	10824.87	IBM	0.8				17.300	
10779	"	12:35	13:48	7.95	6.98	6.4	4371	7462	1138	73	3161	8269	1118	1829	"	"	"	7.37	32.21	10857.08	"	0.7	57	214	5	17.300	
10780	"	14:13	14:20	11.72	11.68	28.7	373	660	97	27	268	702	106	207	"	"	"	7.54	2.81	10859.89	"	0.5	55	376	19	17.300	beams dumped
10781	"	14:22	15:00	9.68	10.05	9.0	2247	4702	585	47	2006	5153	736	1270	"	"	"	7.54	2.81	10859.89	"	0.7	54	34	1	"	
10782	"	15:03	15:13	9.64	10.01	8.1	541	1180	140	11	483	1264	177	309	"	"	"	8.88	19.95	10879.84	"	0.6	56	262	7	"	
10783	"	15:13	16:14	9.38	9.76	8.0	3647	8002	949	75	3343	8312	1229	1740	"	"	"	8.84	4.78	10884.62	FII221	0.55	56	55	2	"	IBM problem on AA ⇒ we used a tape
10784	"	16:14	17:06	8.00	8.30	7.0	3102	6186	807	57	2676	6936	1813	1394	"	"	"	8.54	31.15	10915.77	IBM	0.65	56	358	13	"	IBM BB in being used
10785	"	19:07	20:09	12.21	11.81	8.2	3684	8002	959	79	3406	8757	1305	2095	"	"	"	7.29	22.61	10938.38	"	0.58	57	276	11	"	Beams dumped
10786	"	20:10	21:22	9.50	9.60	6.8	4286	8002	1114	75	3432	8774	1233	1916	"	"	"	10.56	38.90	10977.28	"	0.85	56	486	10	"	
10787	"	21:23	22:32	7.88	7.99	5.6	4156	6739	108	68	2931	7265	1041	1397	"	"	"	9.03	38.69	11015.97	"	0.64	56	475	18	"	
10788	"	22:57	23:57	12.35	12.43	8.6	3634	8002	946	81	3214	9076	1226	2225	"	"	"	7.6	31.55	11057.52	"	0.45	54	356	20	"	Beams dumped
10789	20/3/82	23:58	01:11	9.45	9.97	7.9	3924	8002	1020	80	3303	8965	1281	1458	"	"	"	9.76	35.47	11092.99	"	0.7	56	407	12	"	
10790	"	01:11	02:19	7.79	7.56	6.5	4019	6988	1048	68	2724	8144	1001	1547	ON	ON	OFF	8.54	33.51	11126.50	"	0.65	56	360	12	"	
10791	"	02:45	03:45	11.91	11.52	8.2	3745	8002	974	80	3162	9146	1204	2257	ON	ON	OFF	7.27	29.28	11155.78	"	0.6	56	334	15	"	BEAMS DUMPED
10792	"	03:48	04:22	9.86	9.60	15.8	1980	3546	515	81	1406	4033	523	933	"	"	"	9.61	35.98	11191.76	"	0.87	56	436	8	"	
10793	"	04:23	05:41	9.05	8.83	6.1	4644	8002	1207	74	3382	9048	1214	1818	"	"	"	7.83	15.50	11207.26	"	0.64	54	207	7	"	RUN STOPPED – NO TRIGGER INDICATED
10794	"	06:25	06:45	12.25	11.74	8.5	1140	2532	296	25	1008	2856	370	708	"	"	"	7.68	35.68	11242.94	"	0.57	55	419	11	"	BEAMS DUMPED
10795	"	06:58	08:05	10.47	10.83	7.4	4092	8002	1051	77	3343	9124	1264	2108	"	"	"	9.75	11.11	11254.05	"	0.8	55	130	6	"	IBM PROBLEM; STOP RUN
10796	"	08:06	9:01	9.29	8.97	6.2	3249	5648	846	53	2799	6345	888	1295	"	"	oFF	8.79	35.51	11289.56	Tape FII 121	0.67	56	427	11	"	
10797	"	10:44	11:10	10.53	10.50	7.5	3968	8002	1032	76	3191	8925	1181	2082	"	"	"	7.53	24.45	11313.01	IBM	0.57	58	393	5	"	Beams dumped
10798	"	11:*	12:24	8.93	9.31	6.1	4696	8002	1222	74	3434	8769	1256	1622	"	"	"	8.82	34.98	11347.99	"	0.75	54	436	13	"	
10799	"	12:30	12:42	7.46	7.80	5.5	707	1095	184	10	471	1209	174	224	"	"	"	7.38	34.68	11382.67	"	0.58	56	436	18	"	
10800	"	13:35	14:04	11.26	11.32	8.2	1697	3784	442	36	1618	4090	584	989	"	"	"	6.72	4.75	11387.42	"		57	53	4	"	Beams dumped.
10801	"	14:04	15:34	9.70	9.80	7.0	4149	8002	1080	76	3369	8898	1257	1903	"	"	"	11.18	18.97	11406.39	"	0.80	55	230	8	"	Stopped due to ID alarm.
10802	"	15:34	16:32	8.15	8.26	6.0	3426	5966	891.5	53.2	2643	6390	1006	1195	"	"	"	9.13	37.87	11444.26	"	0.65	56	415	16	"	
10803	"	17:44	18:45	11.75	11.33	8.3	3629	8002	944	78.1	3478	8688	1324	2083	"	"	"	8.21	28.12	11472.38	"	0.55	55	311	7	"	Beams dumped
10804	"	18:46	19:53	9.53 (7.91)	9.62 (7.87)	7.2	4015	8002	1045	75.3	3414	8731	1240	1761	ON	ON	OFF	11.38	41.31	11513.69	"	0.75	56	538	16	"	
10805	"	19:54	20:51	7.9	7.85	6.3	3402	5804	885	56.0	2451	6372	891	1061	ON	OFF	OFF	9.81	39.40	11553.09	"	0.5	56	462	18	"	
10806	"	21:16	22:14	12.00	11.93	8.7	3483	8002	906	79.2	3312	8902	1213	2166	"	"	"	8.02	27.30	11580.39	"	0.45	56	363	10	"	Beams dumped
10807	"	22:15	23:22	9.58	10.02	7.4	4003	8002	1041	76.6	3359	8903	1246	1967	"	"	"	10.39	36.18	11616.57	"	0.75	56	451	10	"	
10808	"	23:22	2343	7.95	8.34	6.3	1014	1892	263.6	16.7	824	1990	301	370	"	"	"	9.25	37.02	11653.59	"	0.62	56	433	16	"	
10809															"	"	"	8.25	8.36	11661.95	"	0.5	55	109	3	"	ID trip – pause;
10810	19/3/82	23:51	0:19	7.77	7.40	5.8	1658	2782	431	25	1150	3040	413	568								0.47					IBM problem (F58 Computer)
															"	"	"	7.57	12.55	11674.50	FI TAPE 104		55	131	5	"	Beams dumped
																								4418+	337 =	4455	

Run	Date	Start	Stop	I_+ (at Run start)	I_- (at Run start)	DT (%)	Time (s)	Rec out	All $\times 10^6$	To reg $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 $E_\gamma > 6$ GeV	T_2 Bit 17 $2T \cdot E_\gamma \cdot 2\pi r$	Rejection NSD	MIP	TOF	$\langle L \rangle$ $\times 10^{30}$	$\int$ Ldt Run	$\int$ Ldt Exp	IBM TAPE	BP [V]	T2 Rej. Ev. Fr (%)	Bhab.	MH	E_{beam}	Remarks

04[20] VSFT came up with no T3 triggers. Then TV screen came up with no triggers. Stopped and started new run. Appears to be functioning normally.

06[50] Missing Mem crate 11 comes up quite frequently.

06[45] IBM busy — came on permanently. Restarted IBM and eventually wrote on to tape.

8[00] - 16[30] McLaren, Peterson

9[00] - 10[00] new filling

13[25] Another new fill readys, but this time the BP current is fluctuating a bit and "Background Optimisation" comes up on the screen, unlike before.

13[32] Now BP is quite stable and "luminosity run" on TV screen. Switch on.

14[00] 40 volam me had problems to reset

16[00] Yamada & Rowe on Shift

16[55] ZDAS and YRUNSM altered - JDERRS is now in the RTCOMMON, so an intermediate file is not used. This should mean less disc congestion at END-RUN time. (TEH)

21[15] new fill ready (filling time ~ 30 min)

23[30] I.D. trip. Jetch High Current: faulty Part 96

23[45] IBM error 53. They're investigating. Switch to Mag-Tape.

21/3/82

0.00 Finch, Naroska

0.45 New fill.

During filling exchanged first TOF ADC, now all channels are working. Exchanged also TDC for Test pulses. Now run again with TOF MIPROC A99 on to check whether pulses are still missing occasionally.

1.41 When doing STD HISTOGRAMS NORD 10 hung on level 9. Run 10811 stopped RUN 10812 started

1.51 JDAS error 64 SUBERROR 4521

2.30 IBM BUSY (Dumping disc) RUN 10812 stopped RUN 10813 started on tape

2.30 Check job finished, we still have the test pulses missing in 10 events out of 10000. So it probably is a Microprocessor error.

1.30 Noticed second bump in Lumi histograms; not quite at twice the beam energy. H. Wriedt will have to check when he comes on shift. It is due to occasionally occuring pedestal fluctuations. Will be cured softwaresise. HW

5.40 Problem with lumi disappeared after new run (No. 10815) started.

7.25 Switched TOF MIPROC off again. Leave off until further notice!

7.42 Magnet current fluctuation. Indeed the DVM did fluctuate by ~ 50A. Now seems to have stabilized.

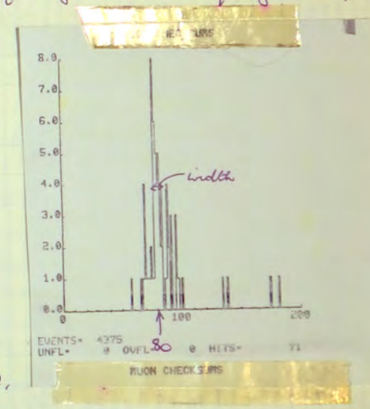
7.55 "Short Break", lots of problems in PKR, beams lost.

8[00] Kreßbach Wriedt

8:20 the break will last at least for another 30 min according to PKR: we have JADE-magnet restart

N.B. There is a problem with temperature control in the gas-house. The temperature is falling & this may eventually affect the muon system gas mixture. Please pay particular attention to the muon checksums histogram. This is generated by adding the drift times of pairs of single hits in the fully overlapped layer 1 chambers, associated with cosmic ray tracks.

The peak value should be 80 ± 5. If it goes below 70, or above 90 or if the central peak width (FWHM) increases above 20, the drift velocity in the chambers is being seriously affected — please call an expert. (A.B., HMC, or P.R.)



11:05 New fill ready

11:25 ID-trip

11.57 JDAS-Error 44/504 Task 1 once

12.30 Start of Run 10818; Olsen Trigger (Bit 14) was changed in two ways:

1.) Output 1 of PROM logics was chosen ~~not as before~~. It allows any one (or more) 3rd septant beside the two in coplanar position. Before it was Output 2, asking for exactly 2 septants ~~beside~~ in coplanar position, but no more were allowed. I think this change makes sense.

2.) One TOF was allowed instead of none before. The Rate of Bit 14 Triggers went up by a factor of 6.73 as to be judged from the event display this is almost entirely due to cosmics. I decide to leave this change up to the end of the shift to give J.O. a chance to see if there is a gg-needle in the cosmics haystack.

13.27 YSPT. μ-digitizer #20 missing

Compare					
Run 10817	Triggers T3 ~~T4~~ T30	Bit 14 118	T1 accept	3470	~~3643~~ 3643
Run 10818	" 12839	" " 773			
Run 817 Bit 14 =			3.5% of T1 acc		
818 "			21% of T1 acc		

Increase about Factor of 6.13

Run	Date	Start	Stop	Run Start I_+	Run Start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	To rej $\times 10^6$	T_1 Acc Sum	T_2 Acc Sum	T_1 Bit 2	T_2 Bit 17	NSO	MIP	TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T2 Rej. Ev. T_2 (%)	Bhab.	MH	E_{beam}	Remarks
													$E_\gamma > 6$ GeV	$2T \cdot E_\gamma \cdot 2\pi$	Rejection												
134																											135
10811	21/3/82																				IBM						Summary lost
10812	"	1·44	2·30	10.14	9·98	17.6	2730	4758	710	125	1899	5472	724	1222	ON	ON	ON	7·76	21·17	11695·67	"	0.65	55	224	15	17.300	
10813	"	2·31	3·17	9.02	8·88	6·5	4587	7871	1193	77	3409	8772	1307	1662	"	"	"	7·79	35·72	11721·39	IAPE F11098	0·54	56	421	11	"	Beams dumped
10814	"	4·12	5·14	12·47	11·80	9·1	3672	8002	956	87	3295	9045	1272	2229	"	"	"	9·55	35·08	11756·47	IBM	0.80	56	432	15	17.300	
10815	"	5·14	6·25	10·28	9·74	7·4	4244	8002	1104	81	3303	9048	1279	1955	"	"	"	8·39	35·62	11792.09	"	0.62	56	411	16	"	
10816	"	6·26	7·18	8·63	8·16	6·3	3105	5000	808	51	2160	5658	741	1026	"	"	"	7·26	22·55	11817·64	"	0·52	57	272	12	"	Beams dumped
10817	"	11:18	12:20	11.46	11.61	9.0	3584	8002	933	84	3410	9141	1284	2477	"	"	OFF	10.66	38.22	11852.86	"	0.80	58	492	20	"	
10818	"	12:33	13:37	9.20	9·21	7.8	3801	8002	989	77	3643	8605	1098	2056	"	"	OFF	8.38	31.85	11884.31	"	0.68	58	401	18	"	
10819	"	13:37	14:11	7.73	7.70	6.6	2031	3835	529	35	1750	4017	504	812	"	"	OFF	6.76	13.73	11898.44	"	0.55	56	182	5	"	Beams dumped
10820	"	14 36	15.30	11.62	11.96	9.7	3273	8002	851	82,7	3632	8343	1134	2203	"	"	OFF	9.96	32.59	11937,03	"	0.80	57	408	14	"	
10821	"	15.31	16 31	9.54	10.10	8.0	3691	8002	934	75	3752	8216	1137	1949	"	"	"	9.64	34.62	11965.65	"	0.65	56	420	17	"	
10822	"	16 33	17 52	7.90	8.51	6.5	4649	7852	1209	78.8	3373	8670	846	1523	"	"	"	7.99	37.14	12002.79	"	0.54	56	454	24	"	BEAMS DUMPED.
10823	"	18 26	19. 26	11.51	11.93	8.6	3577	8002	931	79.8	3323	8956	1239	2224	ON	ON	OFF	10.34	36.99	12039.78	"	0.85	57	428	12	"	
10824	"	19 26	20 35	9.37	9.58	7.2	4094	8002	1065	76.5	3329	8859	1273	2034	"	"	"	8.80	36.03	12075.81	"	0.65	55	445	22	"	
10825	0	20 35	21 29	7.79	8.02	6.2	2763	4820	719	44.8	2074	5253	792	1075	"	"	"	7.68	21.22	12097.03	"	0.5	55	264	10	"	BEAMS DUMPED
10826	"	21 50	22 48	11.77	11.48	8.9	3448	8002	897	79.5	3310	8853	1228	2307	"	"	"	10.50	36.21	12133.24	"	0.8	56	413	15	"	
10827	"	22 49	23 57	9.32	9.41	7.1	4051	8002	1054	74.4	3516	8525	1449	1907	"	"	"	9.49	38.46	12171.70	"	0.61	56	490	9	"	
10828	22/3/82	24 00	0.48	7.49	7.70	5.8	2987	4976	777	45	2228	5342	872	1032	"	"	"	7.49	22.38	12194.08	"	0.48	56	309	10	"	Beams dumped
10829	"	2·08	2·47	11·01	11·30	9·0	2354	5266	613	55	2180	5888	791	1478	"	"	"	10·44	24·58	12218·66	"	0·65	57	289	14	"	
10830	"	2·53	3·58	9·64	9·94	7·5	3921	8002	1021	76	3418	8735	1282	2009	"	"	"	9·37	36·72	12255·38	"	0·55	56	445	16	"	
10831	"	3·59	5·14	8·11	8·39	6·3	4501	8002	1170	73	3963	8737	1281	1656	"	"	"	8·14	36·62	12292·00	"	0·45	56	426	13	"	
10832	"	5·15	5·33	6·67	6·95	5·5	1100	1771	286	16	756	1919	275	323	"	"	"	6·93	7·62	12299·62	"	0·42	56	87	0	"	Beams dumped
10833	"	6·05	7·04	11·6	11·6	8·9	3518	8002	916	82	3281	9163	1223	2317	"	"	"	9·74	34·28	12333·90	"	0·85	57	417	16	"	
10834	"	7:04	8:10	8.2	8.2	7.4	3950	8002	1028	76	3443	8753	682	2018	"	"	"	8.78	34.70	12568.60	"	0.65	56	475	7	"	
10835	"	8:11	8:29	7.8	7.9	6.4	1056	1836	275	17.5	755	2104	286	2298	"	"	"	7.75	8.18	12576.78	"	0.52	57	91	5	"	Terminated to check LG-pedestal
10836	"	8:29	9:03	7.2	7.3	6.1	2014	3444	525	31.8	1499	3824	592	762	"	"	"	7.51	15.12	12591.90	"	0.50	57	196	7	"	Beams dumped
10837	"	10:09	10:30	10.9	10.6	8.6	1249	2706	325	27.9	1047	3145	373	837	"	"	"	8.79	10.98	12602.88	"	0.83	57	130	3	"	
10838	"	10:31	11:37	9.2	9.0	7.7	3935	8003	1024	79.	3283	9024	1253	2184	"	"	"	8.95	35.24	12638.12	"	0.72	56	429	21	"	
10839	"	11:37	11:54	8.7	8.6	7.3	1007	2048	262	19	820	2274	304	544	"	"	"	7.95	8.03	12646.15	"	0.60	56	86	2	"	ISR DOWN
10840	"	11:56	13:06	8.74	8.56	7.0	4206	8002	1095	77.0	3348	9235	1254	1981	"	"	"	8.01	33.71	12479.86	TAPE F11113	0.56	57	362	11	"	
10841	"	13:11	13:22	7.08	7.08	5.5	644	1018	168	9.18	479	1102	218	237	"	"	"	7.33	4.72	12484.58	TAPE F11196	0.44	59	56	1	"	Beams dumped.
10842	"	≈ 14:40	15:25	9.6	9.6			~7500							"				≈ 30.00	≈ 12514.58	IBM	0.85				"	NIO stopped, no run summary
10843	"	15:32	16 38	~~9.68~~	8.57	7.9	3945	8002	1026	81	3129	9399	1184	2227	"	"	"	7.90	31.16	12545.74	"	0.68	57	396	18	"	
10844	"	16·39	16·49	8.05	7.99	7.5	628	1232	163	12·3	494	1328	182	308	"	"	"	7·32	4·59	12550.33	"	0.60	55	54	3	"	Beams lost.
																							4455+	382 =	4837		

Run	Date	Start	Stop	I+ (at Run start)	I− (at Run start)	DT (%)	Time (s)	Rec out	All ×10⁶	To. rej ×10⁶	T1 ACC Sum	T2 ACC Sum	T1 Bid 2 E_γ > 6 GeV	T2 Bid 17 2T·E_γ·2τ	Rejection NSO	Rejection MIP	Rejection TOF	⟨L⟩ ×10³⁰	∫Ldt Run	∫Ldt Exp	IBM TAPE	BP [V]	T2 Rej. Ev. Tr (%)	Bhab.	MH	E_beam	Remarks

Date 21/03/1982 Beginning of Spring.

17.49 Call from Mark J. They want to dump in 20 min.
15.07 JDAS Error 44/703 3 times
15.19 " 44/302 " 2 times

Concerning the Olsson-Trigger (14) with 1 ToF on. I looked at 59 events. Among them 50 clear cosmics, 7 beam-gas, 1 Beam-Beam with 1 γ and 1 charged track in the R-Z-Plane, 1 candidate for $\gamma\gamma \to \gamma\gamma$ with 2 blobs on opposite, at about X=0 with energy sum of 91 counts.

So after run 10827 I ~~has~~ reset the condition to [No TOF's], but leave [2 septents coplanar + 1 further arbitrary septent]

16:00 Hedgecock & Kawabata on shift.
Start run 10822 - Muon crate missing put 4 - Reset.

16.30 During Run 10822 there was some confusion in the Olsen Trigger. At the beginning it was totally disabled, then for seconds the TOF's were not vetoed at all. After event nr about 1250, Trigger bit 14 was set properly as written above. Sorry, my fault. HK. Histogram "Trigger Bits" cleared at ab Event No ca 2600.

23.10 ID TRIPPED — Run PAUSED. — ANODE CURRENT — RESET NORMALLY.

22/03/82

0.0 Finch & Meier
1.17 Magnet fluctuations, reset to 7500 Amps
1:37 Magnet seems to be unstable, suddenly current fluctuations of ~ 50 A appear
2:50 Several time-outs for branch 7, crate 3. We stopped the run and pushed the cables at the crate-controller. After a short test run without errors run 10830 was started.
6:51 Standard Histograms for run 10833 checked. Myon-Checksums Distribution seems to be broader than before
8:02 YSPY detects missing T2 O/P, we cleared the corresponding histogram and checked the new entries, everything looks O.K.

Odaka, Olsen on shift

8:10 At Run start (10835). Ped. crate 3 channel 280 has more than 500 counts. Check histograms. Start new run. Error does not reappear.
No excess could be seen in LG HITMAP BARREL II of Run 10835 at the bin number 2063, which corresponds to crate 3-channel 280. Therefore the above error must be due to software.
9:00 Beams dumped
9:59 New Fill

Just for a test, I have altered the JDAS ERROR message so that if a Time out occurs (44) it prints a clearer message. Hopefully this will be extended to most errors. (HEH)

10:30 IBM transfer error → Terminated Run 10837, and started Run 10838. No problem

10:45 MUON Digitizer Missing 41
11:52 IBM stopped. Run 10838 terminated.
Data are written on MT hereafter.
12:16 μ-chamber CHECKSUM checked. peaks at 80, width ≈ 10
13:12 I found IBM was "ON" after Run 10841 started. But the run is continued because the beams will be dumped soon.
:20 Beams dumped
14:27 New Fill
15:20 Time out branch 7 crate 3, twice
:25 Hang on level 1! → reloaded JDAS

16:00 Rame & Komamiya on shift

18:10 JADE has serious background problem. phone to PKR
They will correct the orbits.
18:20 ☎ This is not a background problem, but beam pipe counter problem: One of the B.P. counter (B.P. # 1) marks very high current. (~ 10 V/R)
We removed the (LEMO) cable from B.P. current monitor.
19:04 Trigger 2 out put missing 162 ← YSPY detected error
19:20 Standard Hists OK.
22:52 I.D. Trip
23:57 Nord50 Busy ABORT-NSO & start new run.

TUESDAY 23 MAR. — 00:00 Ian Duerdoth + {Who is the other shift person}
04:10 Beams Dumped.
02:00 New Fill. — Muon Crate 14 missing at beginning of run — cleared with RESET in Rack 17.
JDAS 051/702.
03:12 JDAS Timeout Branch 7 Crate 3.
03:17 Muon missing digitiz. 20. (counter had 156, 159).
04:23 I.D. trip. — then beams lost.
Standard Histogs (Run 10851) look O.K.
04:55 New fill & start run. —
5:00 background (B.P.) increasing! Ask PKR to reduce it.
5:23 Muon missing digitiz. 41. later 20. & again 20. then 46
6:07 JDAS Error. Timeout Branch 7 Crate 3.
7:25 IBM Tape Error. 54/140000 Pause Run — It terminates! — End of run 10855

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 rej. $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 $E_\gamma > 6$ GeV	T_2 Bit 17 $2T \cdot E_\gamma \cdot 2\pi$	Rejection NSO	Rejection MIP	Rejection TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L\,dt$ Run	$\int L\,dt$ Exp	IBM TAPE	BP [V]	T2 Rej Ev. Tr. (%)	Bhabh.	M.H.	E_{beam}	Remarks
10845	22/3/82	18 25	19 30	10.77	10.50	8.2	~~2912~~ 1018	8001	1018	83	3314	8931	1233	2045	ON	ON	OFF	9.24	36.14	12586.47	IBM	0.60	57	449	11	17.300	
10846	"	19.31	20.47	9.02	8.88	6.5	4579	8002	1192	77	3164	9281	1138	1859	"	"	"	7.42	33.97	12620.44	"	0.59	57	371	18	"	Beam dumped
10847	"	20 48	21 01	7.53	7.41	6.1	757	1279	197	12	536	1439	199	264	"	"	"	6.67	5.65	12625.49	"	0.5	57	63	2	"	
10848	"	22 50	23 54	9.34	9.93	8.6	3697	7346	962	83	3040	8293	7076	1985	"	"	"	8.94	33.07	12658.56	"	0.82	56	390	17	"	Nord50 Busy.
10849	"	23 58	01 12	7.45	8.08	5.8	4426	7201	1152	66	3107	7887	1089	1530	"	"	"	7.37	32.61	12691.17	"	.5	55	387	7	"	Beams dumped.
10850	23-3-82	02 04	03 02	11.07	11.49	9.2	3442	8002	896	83	3351	8974	1239	2380	ON	ON	OFF	11.02	37.93	12729.10	"	.83	58	456	14	"	
10851	"	03 03	04 13	9.06	9.58	7.4	4141	8002	1078	80	3333	8924	1261	1924	"	"	"	8.86	36.69	12765.79	"	.7	56	431	15	"	
10852	"	04 13	04 26	7.53	8.02	7.1	725	1289	189	13	537	1405	191	298	"	"	"	7.10	5.15	12770.94	"	.55	56	61	1	"	Beams lost.
10853	"	04 56	05 43	11.59	11.24	13.2	2846	8002	741	98	2952	10362	1059	2942	"	"	"	9.45	26.89	12797.83	"	.85	60	329	10	"	
10854	"	05 44	06 46	9.74	9.66	8.5	3719	8002	968	82	3338	9201	1271	2163	"	"	"	8.86	32.93	12830.76	"	.8	58	397	11	"	
10855	"	06 47	07 28	7.73	7.87	7.8	2421	4694	630	49	1945	5238	775	~~1166~~ 1160	"	"	"	7.36	17.83	12848.59	"	.55	58	220	8	"	IBM Hang up.
10857	"	07 35	07 51	6.40	6.63	12.2	972	3353	253	31	1222	3142	461	725	"	"	"	5.47	5.32	12853.91	"	.5→.9	61	66	3	"	Beams dumped.
10858	"	853	9 34	11,97	11,16	8,5%	2211	4777	575	48	1982	5312	757	1267	ON	ON	OFF	9,56	21,14	12875,05	"	1.3	57	259	6	"	Beams lost
10859	"	10 17	11.13	11,8	11,7	9,7%	3344	8002	870	84	3086	9503	1144	2529	ON	ON	OFF	10,40	34,77	12909,82	"	~1.0	57	308	15	"	
10860	"	11 14	11:58	9,79	9,79	8,4	2608	5332	678	57	2155	6192	824	1529	ON	ON	OFF	9,0	23,48	12933,30	"	0,8	57	269	7	"	Beams dumped
10861	"	13:03	13:53	10.86	10.77	8.7	2923	6419	761	66.5	2546	7640	920	2027	"	"	"	9.48	27.72	~~13261~~ 13261.02	"	0.8	58	304	10	"	Beams dumped
10862	"	18 07	14 14	9.87	9.64	7.5	4025	8002	1047	78.4	3294	9166	1195	2212	"	"	"	8.82	35.50	12996.52	"	0.85	57	470	12	"	
10863	"	19 15	20 31	8.24	8.16	6.0	4576	7374	1191	71.8	3109	8398	1086	1602	"	"	"	7.12	32.56	13029.08	"	~0.7	57	371	14	"	Beam dumped.
10866	"	21 26	21 50	10,57	10,81	9.5	1359	3265	353	33.4	1283	3667	449	918	"	"	"	9.28	12.61	13041.69	"	0.9	57	154	4	"	muon crate fan failure
10867	"	21 51	22 14	9.75	10.10	7.4	1242	2544	323	23.8	1035	2785	363	676	"	"	"	8.96	11.13	13052.82	"	0.73	55	132	2	"	"
10868	"	22 15	22 23	9.17	9.52	7.1	462	932	121	8.6	367	1016	135	1124	"	"	"	8.69	4.04	13056.86	"	0.7	54	63	1	"	IBM link error. 53
10869	"	22 23	22 44	8.98	9.34	6.9	~~1090~~ 1260	1864	260	18.0	766	2176	255	487	"	"	"	8.22	8.22	13065.08	F11181	0.65	56	87	3	"	muon crate fan fail.
10870	"	22 45	22 51	8.49	8.85	6.8	360	645	94	6.3	274	692	94	128	"	"	"	8.20	2.95	13068.03	IBM	0.63	55	38	0	"	" "
10872	"	23 04				6.4		5952										8.02	26.64	13094.67	"	0.60				"	level 9 hang up
10873	24.3.82	0.04	0.35	6.46	7.04	4.9	1831	2511	476	23.4	1062	2909	368	492	"	"	"	6.28	11.5	13106.17	"	0.6	57	129	8	"	Beams dumped.
10874	"	1.21	2.26	9.24	9.28	8.7	3503	8002	911	79	***** 3437	8814	~~8284~~ 8284	2069	"	"	"	10.67	37.37	13173.54	"	0.95	57	493	11	"	
10875	"	2.26	3.35	6.99	7.09	6.4	~~4496~~ 4496	~~8002~~ 8002	~~1170~~ 1170	75	3545	8619	1303	~~1682~~ 1682	"	"	"	9,09	40.86	13214.40	"	0,7	~~56~~ 56	~~463~~ 463	~~46~~ 46	"	
10876	"	3.36	4.03	6.89	6.45	5.3	1606	2464	417	22	1124	2681	417	420	"	"	"	7,3	11.72	13226.12	"	0.6	58	139	5	"	Beams dumped
10877	"	4.38	5.32	11,93	11,36	10,2	3232	8002	841	85	3157	9655	1171	2487	"	"	"	10.58	34.18	13260.30	"		54	393	12	"	
10878	"	5,32	5.36	9.7	9.5	7,5	—	735	—	—	—	—	—	—	"	"	"	10.60	3.69	13263.99	"	0,8	—	—	—	"	Code 9, stopped run.
10879	"	5.48	7.03	6.91	6.94	6.3	4483	8002	1166	74	3636	8499	1410	1494	"	"	"	8.62	38.63	13302.62	"	0,75	57	479	18	"	
10880	"	7.03	7.33	6.21	6.31	5.6	1756	2784	457	25.1	1248	2964	483	420	"	"	"	7,3	12.82	13315.44	"	0.65	56	158	3	"	Beams dumped
10881						83		125										873	14.97	13320.41	"	0.85					NORD HANG LEVEL 9
10882	'	8:30	9:39	9.35	8.33	7.4	4112	8002	1071	74.2	3373	8950	1220	1890	"	OFF	"	8,32	34.22	13354,63	"	0.8	56	415	13	"	
																								6837 + 277 = 5114			

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	To. reg. $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 $E_{\gamma} > 6$ GeV	T_2 Bit 17 $2T \cdot E_{\gamma} \cdot 2\pi$	Rejection NSD	Rejection MIP	Rejection TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T2 Rej. Ev. Fr (%)	Bhab.	MH	E_{beam}	Remarks

Run 10856 – short, junk – trying to re-establish IBM LINK.

7[54] start Run 10857 — Currents are down to 16.5mA and background is going bad. Mark J phones to say dump beams at 7[50].

7[50] Beams dumped. 1955 nb[-1] this shift.

8[00] Warming & Takeda on shift

9[22] Dittrich replaced Warming

12:05 Odaka replaced Takeda

:40 New Fill Background is very high (BP ~ 1.5V).

13:23 Telephone from TASSO: They have a trouble with their magnet. They want to dump beams and access the beam line at 13:45.

13:50 Beams dumped.

14:10 Magnet is powered down to 500 A.

15:00 " up to 2500A , INJECTION started.

16[00] 23/3/82 H. Mills & S. Kawabata on shift

16[12] New Fill. Very high background – optimising.

16[29] meter says it is still to high to switch on. We run the HVBP program to set the voltages in case they are wrong.

16[33] ~~PACR~~ still trying for vs. E^+ beam starts to lose bits

16[38] Like times still bad. Beams not stable. This is no use at all

16[42] Mark J request new fill

16[50] Beams Dumped.

18:07 New fill start Run 10865

YSPY says T2 Output 145 missing. Will keep an eye on it

19[35] Kawabata is replaced by Komamiya

20[15] Mark J request new fill at 20[30]

21[08] New Fill in the machine but they have been optimising for > 10 minutes. Background started a factor 10 too high.

We prepare to start a run and the Nord hangs on level 9.

When run did start (10866 – 64 65 were bad starts) Muon Crate 12 was missing. Pressing button on Camac module did not cure. Pressing RESET in pit worked.

21[45] fan fail. muon crate – turned OFF & on

22[12] " " " Telephoned Austin Ball to let him know the situation. He agrees that we carry on at the moment. The cure is:

1) STOP the RUN
2) Turn Muon Camac crate OFF, wait, ON (its the one that has an alarm!)
3) START a run.

22[20] IBM link error. phone to IBM. Error was 53
We switched to magnetic tape

JDAS does not receive PETRA information. PLUTO have same problem – they have an "expert" on shift who has been dispatched in the direction of F58's mini-computer room.

22

22[45] IBM link on again Called Austin, Beale – she gave information on Run Extraction, this worked, So we stopped Austin from coming in unnecessarily.

22[50] fan fail again

23[00] changed the fan unit (Branch 3 – Crate 2 ; MUON CAMAC)
run 10871 had faulty LG pedestal run.

24/03/82

0[00] Clarke + Heinzelmann

5:36 Nord stops level 09. Reload Nord.

8:00 A. Ball & W. Bartel

8:24 Run 10881 interrupted by NORD hang at level 9. Reload, switch off TOF in procs. Start run 10882

9:45 Std. histograms ok. Run 10883 started.

10:56 Start run 10884. Mark J suggest refill at 11:10 – OK by us.

11:11 Stop run 10884. Dump beams.

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 reg $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 $E_\gamma > 6$ GeV	T_2 Bit 17 $2T \cdot E_\gamma \cdot 2\pi$	Rejection NSD	Rejection MIP	Rejection TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T_2 Rej. Ev. T_2 (%)	Bhab.	MH	E_{beam}	Remarks
10883	24/3/82	09.39	10.56	7.76	6.89	6.9	4602	8002	1198	82.8	3398	9209	1316	1823	ON	~~OFF~~	OFF	7.23	33.27	13387.90	IBM	0.6	57	416	13	17.300	
10884	"	10.57	11.13	7.47	6.62	5.5	988	1542	257	14.1	670	1734	260	322	"	ON	"	6.92	6.84	1339474	IBM	0.5	57	75	2	"	beams dumped
10885	"	11.46	12.50	9.02	9.17	8.9	3830	8002	997	88.3	3203	9055	1171	2005	"	ON	"	9.35	35.81	13430.55	"	0.85	57	418	11	"	
10886	"	12.50	13.48	9.00	9.16	7.0	3265	6358	850	74.1	2642	6999	1017	1371	"	~~ON~~ OFF	"	8.23	26.86	13457.41	"	0.65	56	355	5	"	beams lost
10887	"	15.02	16.09	11.34	11.29	7.7	4001	8002	1041	80.2	3284	9052	1174	2073	ON	ON	OFF	9.40	37.62	13495.03	"	0.9	56	440	11	"	
10888	"	16.09	17.22	8.94	9.18	6.8	4361	8002	1135	77.4	3291	9250	1208	1944	ON	ON	OFF	8.09	35.29	13530.32	"	0.69	57	457	16	"	
10889	"	17.22	18.53	7.20	7.52	5.3	5352	8002	1392	73.8	3349	9183	1226	1591	ON	ON	OFF	6.14	32.86	13563.18	"	0.57	56	379	18	"	
10890	"	18.53	20.39	5.74	6.09	4.3	6276	8002	1634	70.1	3506	9092	1325	1484	ON	ON	OFF	4.59	28.81	13591.99	"	0.45	56	356	13	"	
10891	"	20.39	21.15	4.62	4.94	3.8	2082	2422	542	20.4	1065	2756	414	391	ON	ON	off	3.86	8.03	13600.02	"	0.36	56	88	2	"	BEAMS DUMPED (AT LAST!!)
10892	"	22.11	23.16	11.15	11.31	7.8	3879	8002	1009	79.2	3299	8868	1147	2096	ON	ON	oFF	9.12	35.39	13635.41	"	0.95	56	396	16	"	
10893	"	23.18	0.35	9.04	9.43	6.4	4572	8002	1190	76.4	3488	8716	1292	1692	"	"	"	7.75	35.45	13670.86	"	0.6	56	408	17	"	
10894	25/3/82	0.37	1.02	7.07	7.42	5.5	1496	2396	389	21.4	1054	2624	397	496	"	"	"	6.93	10.36	13681.22	"	0.55	56	176	3	"	Beams dumped (Run 10895 is junk IBM link problem)
10896	"	2.41	3.26	11.11	11.24	8.2	2613	5536	679	55.7	2292	6149	825	1391	"	-	"	9.49	24.80	13706.02	FH 132	0.95	56	307	15	"	
10897	"	3.26	4.05												"	"	"			?	IBM	0.7					Run summary lost
10898	"	4.12	4.59	7.89	7.84	6.8	2769	5041	720	488	2161	5615	807	1071	"	"	"	7.73	21.40	13727.42	FH 122	0.65	57	244	10	"	
10899	"	4.59	6.03	6.82	6.76	5.6	3834	6073	997	55.9	2647	6773	984	1194	"	"	"	6.98	26.75	13754.17	IBM	0.6	56	296	11	"	Beam dumped
10900	"	6.45	6.49	11.37	11.35	8.7	210	482	54	4.7	178	529	71	~~144~~	"	"	"	9.54	2.0	13756.17	"	1.1	56	29	2	"	Beam lost
10901	25/3/82	8.13	9.15	11.45	11.58	8.3	3702	8002	963,8	79,8	3365	8694	1268	2042	"	"	OFF	10.66	39.47	13795.64	"	0.95	56	465	17	"	
10902	"	9.15	10.23	9.39	9.62	7.3	4019	8002	1046,0	76,1	3391	8807	1242	1819	"	"	"	9.34	37.55	13833.19	"	0.7	56	425	17	"	
10903	"	10.23	11.33	7.79	8.02	6.0	4206	7056	1095	65,7	2958	8042	1730	~~1444~~ 1420	"	"	"	7.66	32.23	13865.42	"	0.65	57	390	17	"	Beams dumped
10904	"	12.12	13.15	11.37	11.41	8.6	3722	8002	969	85.7	3188	8927	1177	2001	"	"	"	8.86	32.96	13898.38	"	0.95	54	414	14	"	
10905	"	13.15	14.25	9.21	9.49	7.2	4164	8002	1083,8	78,1	3434	8806	1302	1823	"	"	"	8.57	35.69	13934.07	"	0.75	56	454	13	"	
10906	"	14.25	15.03	7.56	7.89	5.9	2220	3812	578	34	1678	4086	629	4174	"	"	"	7.42	16.47	13950.54	"	0.60	55	180	10	"	Switch off HV announced, meanwhile beams lost
10907	"	15.35	16.29	11.87	11.85	8.0	3185	6547	828	65.9	2754	7411	1005	1734	"	"	"	9.22	29.37	13979.91	"	0.95	57	238	11	"	IBM error. → tape
10908	"	16.36	17.47	7.67	8.12	7.4	4123	8002	1073	796	3432	8963	1352	2035	"	"	"	8.35	34.44	14014.35	FH 173	0.60	56	395	11	"	
10909	"	17.48	19.14	7.67	8.12	5.5	5167	8002	1344	74.5	3486	8847	1301	1620	"	"	"	7.00	36.18	14050.53	IBM	0.50	55	439	17	"	IBM
10910	"	19.15	19.23	6.23	6.24	5.8	456	627	119	6.8	253	718	80	121	"	"	"	6.20	2.87	14053.40	"	0.40	57	24	1	"	
10911	25/3/82	20.40	21.48	8.88	9.13	7.6	4058	8002	1056	~~775~~ 803	3308	9043	1184	2103	"	"	"	9.32	37.83	14091.23	IBM	0.90	56	416	8	"	
10912	"	21.48	23.05	8.86	9.11	6.4	4565	8002	1188	75.5	3384	9060	1193	1841	"	"	"	7.96	~~36.33~~	14127.56	"	0.60	56	445	8	"	
10913	"	23.05	0.06	7.33	6.60	5.4	3625	5560	943	51.3	2363	6279	842	1157	"	"	"	6.67	24.19	14151.75	"	0.50	56	278	13	"	Beams dumped
10914	26/3/82	0.57	2.02	11.17	11.29	7.9	3880	8002	1010	79.5	3302	9047	1197	2047	"	"	"	9.02	35.00	14186.75	"	0.87	56	454	11	"	
10915	"	2.02	3.17	9.27	9.47	6.6	4457	8002	1160	76.6	3327	8957	1215	1854	"	"	"	7.61	33.92	14220.67	"	0.62	56	397	10	"	
10916	"	3.18	3.47	7.72	7.89	5.8	1750	2892	450	26.4	1207	3225	477	619	"	"	"	6.68	11.70	14232.37	"	0.55	56	123	3	"	Beams dumped
10917	"	4.29	5.35	11.26	11.21	7.8	3913	8002	1018	78.9	3295	9109	1203	2115	"	"	"	8.98	35.16	14267.53	"	0.85	56	391	13	"	
																								5714	+ 347	= 5461	

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All ×10⁶	To. reg ×10⁶	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 E_T>6GeV, 2T	T_2 Bit 17 E_T·2τ	Rejection NSO, MIP, TOF	⟨L⟩ ×10³⁰	∫Ldt Run	∫Ldt Exp	IBM TAPE	BP [V]	T2 Rej Ev. Fr (%)	Bhab.	MH	E_{beam}	Remarks

11:41 New fill ready
1:45 Tmount Br 3 crate 2 pause/cont works.
13.15 ID - trip for unknown reason conditions were stable (BP=0.64)
13:50 Major power failure (10KV) beams lost, Ebeam energy = 0, DORIS - magnd = 0, ID trip
16 = SHIFT CHANGE
NOZAKI & HEDGECOCK
18:00 Proposed new fill did not materialise as fault occured in beam transport system. Carry on with present fill.
19:00 Still waiting for a new fill. Noticed "Muon Crate Missing" for 10 appears quite frequently.
21:15 Beams dumped.
22:11 Run 10882 started after new filling.
22:25 YSRY MUON DIGITISER MISSING (20)

25.3.82

0 00 Kawabata / Clarke

Beam off 0.37. On 2.35.
02.35 IBM link down - writing on tape.
04.05 IBM error 53 again. Could not stop run, had to reboot N10.

8.00 Duerdoth / Krehbiel. Injection took about 2 hrs. Now background not very good. We complain. Its slowly improving
JDAS Error Timeout ~~Bank~~ branch 7 crate 3 after ca 100 evts of Run 10907 occured only once.
9.05 Muon Crate Missing 10 Flashing up once. 11 (twice)
10.30 Run 10903 5 × IBM JAM, 1-3 sec.
11.32 Beams dumped.
12.00 Beam up again, but I think they can do the filling. It takes a lot of Machine Optim. and some complaining at PKR to come to acceptable (but not reasonable) background levels.
12.22 Run 1094 about Ev No 1600; Timeout branch 7 crate 3 ||| 1
Flashing μ crate 10 missing (now & then).
13.52 Run 10905 Event No 4700 Timeout branch 7 crate 3 ||
5125 μ - Crate Missing 11 1
14.40 MARK J WANT TO DUMP AT 15:00 We say THAT IS TOO SOON — BUT THEY DO ANYWAY.
15.35 New fill ready to start
Run 10907 several IBM JAMS 1-5 sec. New record Int. Lumi in a sh. ft. 209.0 nb⁻¹ (87 MULTI HADS)
~~Bang~~ Runs 10901 - 10906 full, + a 14.63 nb⁻¹ of run 10907
Check nb⁻¹/day tomorrow morning at 8 oc!

25.3.82
16 00 Rowe + Minowa
16 30 IBM error 53. We telephone FSB 3219/2162 → no response
So we write to tape for now.
Also main phone is not working.
17 17 No triggers (we are still writing to tape)
One power supply of Tokyo Lead glass (Barrel #5) trip off due to over current. After switching off and on the power supply, The triggers are ok.
17 50 Switch back to IBM after Run 10908

18 30 Mark-J requests a new fill at 1845.
18 35 New fill is impossible until 19 15 because of Synchrotron / Linac problems.
2330 Mark-J requests a new fill at 2340.
2332 LINAC. Power supply failure, no new fill before midnight

26. 3. 82
0:00 Kawzati + Matsumura
0 05 Beams dumped.
0 57 New filling ready. Start run 10914.
3 45 Beams dumped.
4 15 New fill ready.
4 20 1 signal from BP counters (this time #16) made ~~makes~~ BP current very high (~4V). We ~~We~~ removed it, then current became normal (~0.9V)
6 35 Beams lost.
7:30 New filling ready. Put BP signal #16 back but there is no problem.

08.00 Friday 26/3/82. Peter Steffen & Fred Lobinger.

10.18 Beams dumped.
11.20 New beams. Very high BP. due entirely to #24.
12.44 IBM Link down, PETRA inf. link down, no response from FSB
IBM phoned, the operators will look for.
Start writing run 10925 to tape Fill 115 (Miproc switched ON after few hundred evts).

Run	Date	Start	Stop	at Rim start I_+	at Rim start I_-	DT (%)	Time (s)	Rec out	All ×10⁶	T_0 rej ×10⁶	T_1 Acc Sum	T_2 Acc Sum	T_1 Bit 2 $E_T>6$GeV	T_2 Bit 17 $2T\cdot E_T\cdot 2\tau$	Rejection NSD	MIP	TOF	⟨L⟩ ×10³⁰	∫Ldt Run	∫Ldt Exp	IBM TAPE	BP [V]	T_2 rej Ev Fr (%)	Bhabha	MH	E_{beam}	Remarks
10918	26/3/82	5:35	6:35	9.35	9.40	6.2	3555	6038	925	57.7	2510	6906	965	1285	ON	ON	OFF	7.16	25.46	14292.99	IBM	0.70	56	308	8	17.300	Beams lost
10919	"	7.45	8.52	9.47	9.46	7.7	3998	8002	1041	80.5	3245	9021	1168	2026	ON	ON	OFF	8.58	34.32	14327.31	IBM	0.82	56	412	9	17.300	
10920	"	8.52	10.08	7.89	7.93	6.5	4528	8002	1179	77.0	3338	9209	1267	1846	ON	ON	OFF	7.82	35.39	14362.70	IBM	0.65	57	447	12	17.300	
10921	"	10.09	10.18	7.70	7.74	5.9	561	954	146	8.6	418	1037	168	206	"	"	"	7.17	4.02	14366.72	IBM	0.60	57	58	1	17.300	Beams Dumped.
10922	"	11.24	12.29	11.54 (9.37→) 8.95	11.73 (9.71→) 9.43	8.0	3870	8002	1007	80.3	3269	9015	1246	2196	"	"	"	8.70	33.67	14400.39	~~IBM~~	:76	56 43	429 69	11 1	17.300	
10923	"	12.29	12.41			7.6	666	1586	173	13.2	574	1511	211	348	"	"	"	8.64	5.75	14406.14							
10924	Does not exist																										
10925	26/3/82	13.10	14.06	5.26	8.68	8.6	3205	7489	834	71.7	2700	8097	1004	2044	"	"	"	6.64	21.29	14427.43	TAPE (Fill 115)	0.70	53	262	6	17,300	Beams Dumped.
10926	26/3/82	14.38	14.46	10.69	11.18	7.9	487	1044	127	10.0	421	1133	153	290	"	"	"	10.22	4.98	14432.41	IBM	0.80	55	58	1	17.300	Beam Lost.
10927	"	16:05	17:18	11.09	11.03	7.1	4173	8002	~~1685~~	78.8	3577	8656	1300	1932	"	"	"	9.30	38.83	14471.24	"	0.7	57	471	18	"	
10928	"	17.18	18:21	8.33	8.80	7.5		7987											26.28	14497.52	"	0.7				"	Nord hang up
10929	"	18:28	18:34	6.81	7.31	10.5	314	615	82	9	236	624	81	130				6.85	2.15		"		61	18	2	"	
10930	"	18:34	18:46	6.69	7.19	10.3	715	1573	186	19	574	1508	216	275	"	"	"	6.42	4.59	14504.86	"		57	56	3	"	
10931	"	19:35	20:02	11.37	11.47	8.8	1599	3863	416	37	1364	3674	492	909	"	"	"	8.79	14.06	14518.32	"	0.95	56	185	9	"	beams lost
10932	"	20:55	20:46	11.30	11.52	9.3	655	1759	170	15	521	1563	183	401	"	"	"	8.71	5.71	14524.03	"	0.8	55	66	2	"	
10933	"	20.52	21:50	10.38	10.83	8.0	3501	8002	910	73	2893	7641	990	1789	"	"	"	8.04	28.15	14552.18	TAPE (Fill 184)	0.7	57	342	15	"	
10934	"	21:51	22:49	8.76	9.30	8.0	3472	8002	903	72	2994	7304	1096	1565	"	"	"	7.58	26.31	14578.49	IBM	0.65	57	306	19	"	
10935	"	22:49	23:12	7.55	8.01	7.7	1329	3201	345	26	1126	2800	425	527	"	"	"	6.90	9.17	14587.66	"	0.6	57	116	0	"	Beams dumped
10936	27.3.82	7:02	7:28	11.7	11.8	9.0	1440	3243	375	34	1273	3663	434	108	"	"	"	9.44	13.59	14601.25	IBM	0.9	55	154	7	"	
10937	"	7:32	8.35	10.45	10.75	8	3733	8002	971	76,9	3362	8783	7226	2260	"	"	OFF	10.21	38.11	14639.36	TAPE Fill 120	0.75	56	459	10	17.30	
10938	"	8.35	8.50	run summary for this run because of Nord 10 crash. Trigger 3200 or some											IBM records possibly 2012			~9.50	~14648.86		IBM	0.67		~100	~3	"	Nord 10 crash
10939	"	9.02	9.42	7.92	8.32	7.3	2314	4322	602	43.9	1823	3479	665	1044	ON	ON	OFF	7.87	18.21	14667.07	"	0.65	57	236	12	"	
10940	"	9.55	17.03	6.87	7.25	6.2	3968	6650	1032	63,9	2745	7576	966	1424	"	"	"	6.62	26.28	14693.35	TAPE Fill 123	0.60	58	333	14	"	Beams dumped
10941	"	17:08	17:26	11.10	11.81	9.7	783	2169	204	19.7	745	1802	261	527	ON	ON	OFF	9.59	7.51	14700.86	IBM	0.8	33	103	0	"	Beams lost.
10942	"	18:00		Run summary is lost because of NORD crash.											"	"	~~OFF~~				"	0.8 no?				"	
10943	"	18:09	18:24	10.36	11.17	8.7	750	1840	205	18.0	665	~~1755~~	222	499	ON	ON	(ON)	8.85	6.99	14707.85	"	?	42	71	1	"	We forgot to turn off the TOF-MIPROC after reloading NORD.
10944	"	18:33	18:34	~~10~~ 9.57	10.49			24							"	"	OFF				Tape	?		1	0	"	Beams lost. Data are not kept, because this run was very short.
10945	"	21:30		Run summaries are lost.											"	"	"				IBM	0.8				"	very short runs.
10946	"														"	"	"				"					"	
10947	"	21:43	22:19	10.56	10.73	9.6		4788							"	"	"	8.35	18.61	14726.46	IBM	0.75				"	
10948	"	22:34	22:44	9.11	9.42	10.0	541	1159	141	14.1	418	1098	130	259	"	"	"	8.79	4.75	14731.21	"	0.65	42	58	0	"	
10949	"	22:55	0:11	8.9	9.0	6.8	4428	8002	1151	79.8	3447	8577	1184	1855	ON	ON	OFF	8.40	37.19	14768.40	"	0.7	55	431	18	"	
10950	28.3.82	0:11	1:03	7.1	7.4	5.5	3094	4884	805	44.3	~~2149~~ 760	5200	744	1078	ON	ON	OFF	6.95	21.51	14789.91	"	0.49	55	266	6	"	beams dumped
10951	"	2:05 Connection time	3:12	11.4	11.7	7.6	4009	8002	1043	79.2	3356	8869	1225	2203	ON	ON	OFF	9.16	36.72	14826.63	TAPE Fill 114	.95	56	436 5961 + 202 = 6163	14	"	

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 rej $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bid 2 $E_\gamma > 6$ GeV	T_2 Bid 17 $2T \cdot E_\gamma \cdot 2\pi$	Refection NSO	MIP	TOF	$\langle L \rangle \times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T2 Rej. Ev T_2 (%)	Bhab.	MH	E_{beam}	Remarks

13.15 IBM link back up, but will finish the run on tape.
13.35 I.D. Anode current trip.
14.00 Beams dumped.
14.45 Beams Lost.

16:00 Dittmann & Kobayashi
16:25 I.D. tripped because of SPARK.
18.20 Nord hang-up Level 9, restart and TOF MIPROCS off
20:50 IBM Multiplexer down again, PLUTO cares, we write to tape.
23:12 Beams dumped

27.3.82 Matsumura + Minowa
0:00 Break due to the PIA Problem.

0656 Beams back.
0728 IBM ERROR 53 write to tape.
PETRA Information link is also down. Type in Ebeam by hand. (17300 MeV)

08.00 Saturday 27/3/82 Krehbiel & Loehrer

Somehow the Display (LUN 34) hung up. Obviously this came from the "Run-so-far" Routine. This one could be repeated all the time, but histograms or ext. display answered with "Too quick - Display busy etc."
"Muon crate 10 missing" flashing now and then. also "11"
After some time or a random walk in function keys the display was working again.
8.50 Nord crash (Load: Standard histograms, Divided Data taking, QED.) Nothing moves
Level 5 with one flicker to 7? every second. Data lamp 13, 5, Interrupt, Paging, Protect ring 2,
+
9.05 Run 10939 occasional IBM JAM's. Once (Rec 1100) IBM Error 54. Went away after "Pause - Continue"
Muon Crate Missing 10 Flichers.

9.40. IBM busy & IBM error 53 (Time out use channel) — IBM looking into it.
Beams will be dumped at 10.00. — no, those would be PIA problems — wait till 10.30 → 11.00!
9.50 "IBM BUSY" gone, but still error 53 & "Information link down" — Write run 10940 to tape F11 123
9.53 That did the trick! Threats it with a tape & the link comes back up!!
10.00 PETRA TV says "FEHLER AM DESY-MODULATOR. NEUE FUELLUNG UM 11 UHR. BITTE WEITER MESSEN"
10.30 about Event 3650 in Run 10940: TIMEOUT Br. 7 Crate 3
11.00 Very accurately after the prophesy PETRA TV says "switch off the HV" Beams dumped

12.04 Before that time filling of PETRA must have stuck. Now TV says: Short break.
12.09 TV says Stromversorgung/Vakuum Fehler in DESY. Dauer bis ca 13h. We run down the JADE Magnet.
13.00 " " Stromversorgungsfehler in DESY, Start unbekannt.
ca 15.00 " " Restart on 16.00

16:00 Murphy & Odaka on shift

17:02 New Fill ANODE
:08 ID tripp (ANORD CURRENT)
:26 " → Beams lost.
:52 New Fill
18:01 NORD-crash; Run summary of Run 10942 is lost.
:05 re-loaded NORD 10
:30 IBM-link error → terminated Run 10943
:33 Run 10944 is written on MT. Link with PETRA was also down, so we typed-in I^+ and Ebeam by hand.
:34 Beams lost. We decided to forget about Run 10944, because it was a very short run (24 events).
19:23 New Fill → Beams were lost immediately.
21:22 New Fill
:30 NORD-crash
The first trial to reload NORD [redacted] failed.
:43 NORD was successfully reloaded.
:45 JPAS ERROR 56 — we lost several of these (TOF), then they went away.
:55 YSPY ERROR: DL8 no response 63
There is a hole in 'JETC WIRE MAP'. WIRE # 504 ~ 512, We telephoned Heinzelmann. → He is coming.
22:19 NORD crash ... Run summary of Run 10947 is lost.
Heinzelmann has replaced DL8 #63.

Sunday, 28.3.82 Tscheslog + Kleve

2:00/3:00 "Summertime"
3:00 IBM-error 54 → write on tape
4:20 IBM up again

[redacted]

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec 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 $2T \cdot E_4 \cdot 2\pi$	Rejection NSO	Rejection MIP	Rejection TOF	$\langle L \rangle \times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T2 rej Ev. Rej. Fact. (%)	Bhab.	MH	E_{beam}	Remarks
		(Camac-time)																								
10952	28.3.82	3:15	3:25	9.01	9.59	7.4	588	1151	153	11.3	460	1264	154	283	ON	ON	OFF	8.79	5.17	14831.80	~~IBM~~ tape F11180	0.66	55	59	0	17.300	
10953	"	3:25	4:12	8.76	9.34	6.9	2779	5250	723	49.7	2214	5644	763	1293	ON	ON	OFF	8.37	23.27	14865.07	IBM	.65	55	281	9	"	Beams lost
10954	"	5:07	6:11	11.62	11.80	8.3	3997	8002	982	81.6	3317	9105	1175	2112	ON	ON	OFF	9.18	34.67	14899.74	IBM	.95	57	424	13	"	
10955	"	6:11	6:54	9.29	9.79	7.9	2559	5644	665	52.2	2362	5967	875	1264	ON	ON	OFF	8.60	22.01	14921.75	"	0.64	57	273	6	"	Beams lost
10956	"	**10.38**	**11:38**	**11.1**	**12.11**	**8.8**	3563	8002	927	81.8	3098	8567	1113	2132	**ON**	**ON**	**OFF**	8.87	34.09	14955.84	"	**0.7**	56	439	13	"	
10957	"	**11.38**	12:27	8.86	10.11	10.1	2928	8002	761	76.6	2675	7493	975	1791	ON	ON	OFF	8.10	23.11	14979.55	"	0.8	57	296	9	"	
10958	"	**12.28**	**13.25**	**7.5**	**8.75**	**9.7**	**2869**	**8002**	**745**	**72.0**	**2437**	**6879**	**840**	**1464**	**ON**	**ON**	**OFF**	**6.97**	**19.98**	**14999.53**	"	**0.9**	**58**	**230**	**4**	"	**Beams Jumped**
10959	29.3.82	18.09	18.20	9.67	10.07	9.5	667	1954	174	16.5	568	1473	181	402	ON	ON	OFF	8.74	5.83	15 005.36	~~Tape~~ IBM	0.6	57	68	0	"	IBM working
10960	"	18.26	19.19	9.48	9.91	8.6	3136	8002	816	70.5	2355	5499	818	1707	"	"	"	8.11	25.45	15' 030.81	Tape		57	243	13	"	IBM Lin 4 down
10961	"	19.19	20.23	6.84	7.60	7.4	3684	8002	959	71.1	2763	7447	934	1764	"	"	"	7.35	27.09	15,057.90	IBM	0.58	55	344	10	"	IBM on
10962	"	20.26	20.45	6.49	7.04	6.2	1254	2285	327	20.3	848	2275	284	460	"	"	"	6.54	8.19	15066.09	"		58	92	8	"	Beams dumped
10963	"	21.51	22.44	11.47	11.76	9.0	3184	8002	828	74.5	2579	7290	902	1804	"	"	"	8.21	26.15	15092.24	"	0.73	54	332	11	"	
10964	"	22.45	23.28	9.23	10.02	12.9	2604	8002	678	87.7	2087	5675	770	1300	"	"	"	7.57	19.71	15163.95	"	0.69	57	241	3	"	
10965	"	23.31	23.50	9.15	8.91	25.8		2411										6.15	5.16	15169.11							No run summary
10966	"	22.54	23.19	7.7	8.4	11.6	1471	3556	383	44.4	1087	2674	399	539	ON	ON	OFF	7.00	10.30	15179.41	IBM		55	148	7	17.300	beams lost
10967	29.3.82	0:42	1:25	11.7	11.8	10.3	2527	8002	669	69.2	2196	5876	727	1336	ON	ON	OFF	8.83	22.71	15202.12	IBM	.90	56	283	11	17.300	
10968	"	1:25	2:09	9.9	10.3	9.5	2601	8002	676	64.2	2240	5819	895	1244	"	"	"	9.56	24.87	15226.99	IBM	.62	57	328	13	17.300	
10969	"	2:09	2:58	8.8	9.2	8.2	2950	8002	767	63.1	2294	5702	807	1097	ON	ON	OFF	8.47	25.00	15251.99	IBM	.83	56	305	7	17.300	
10970	"	2:59	3:34	7.7	8.1	7.3	2112	5282	550	40.3	1558	3780	533	699	ON	ON	OFF	7.89	16.67	15268.66	IBM	.45	55	199	4	17.300	beams dumped
10971	"	4:22	5:04	11.8	11.8	10.6	2516	8002	655	69.4	2071	5220	757	1358	ON	ON	OFF	9.32	23.45	15292.11	IBM	.90	57	283	11	17.300	
10972	"	5:05	5:45	10.0	10.3	10.4	2402	7745	626	65.1	1940	4995	704	1095	ON	ON	OFF	8.16	19.62	15311.73	IBM	.60	56	241	8	17.300	
10973	"	5:47	6:13	8.9	9.3	9.3	1586	4967	413	38.2	1210	3268	454	645	ON	ON	OFF	8.03	12.74	15324.47	F11143	.58	57	140	9	17.300	beams dumped
10974 / 10981	ID	Pulser runs on tape																								
10982 / 11020	Lead glass Xe runs																									
11021	30.4.82	12.09	12.35				1493	1831													F11112					Cosmic B=0
11022	"	11.38	14:10				5441	6515													"					" " ← No Runs # 10123/4
11026	1.5.82	9.53	10.13				1128	3523													F11120					TZERO L
11027	"	10.18	10.36				1048	3513													F11115					TZERO R
11031	"	11.23	11.26				96	123													F11114					POSER (P4, G1)
11034	"	11.44	11.50				~~733~~ 410	733																		ID Pulser Runs

063 + 169 = 5832

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	To. rec $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bid 2 $E_q > 6$ GeV	T_2 Bid 17 $2T \cdot E_q \cdot 2\tau$

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28.3.82

0800 Heinzelmann & Clarke

0800 Beams tripped.

09.30 Still no beam

09+0 Message from PKR " Modulator in Linac 1 defektiv - re-start as soon as poss."

11.38 Run 10956 started.

15.20 Message on screen " Trouble with vacuum in synchrotron " !

1600 Steffen and Murphy

D. Clarke reports that he has replaced 2 modules in forward μ-counter HV supplies. Probably best to reset them when PETRA is back on.

18.00 After filling ~~tank~~ bp-current was very high. Found finally that counter 16 gave all the reading. Pulled it out from the box. BP-Reading now seems ok.

17.00 Krebbiel, aided by Navocha on-line reloaded HV's to Forw. Mu-Counters.

1820 IBM fault. Stop run 10959.
Start run 10960 on tape.
"YPARA 8 PED CRT1 CH45 IS >500" has appeared at the beginning of each of the last few runs. The book says we should panic if it happens too often; how often is too often?

2340 Very frequent 'IBM BUSY', Run summary of Run 10965 lost when run was stopped during IBM SR

Monday, 29.3.82 0⁰⁰ Kanzaki + Heine

0^17 beams lost

1^37 beams back
trigger bit 24 (FWHM) a bit high, but dead time reasonable (≤10%).

2^04 Above mentioned LG pedestal error is due to a dead ADC chips but it doesn't affect trigger rate at all and it is always removed when LG analysis [redacted] so we leave it for more 5 hours. (till morning comes)

4^30 beams dumped.

5^20 beams back
"Muon Crate Missing 12", but we couldn't reset it in the HV room. → Reset it on the crate beside the Rücksack → O.K.

6^45 IBM link error 54. → no write on tape

6^50 IBM ok again, but for the last 10 min. of this period we continue to write on tape

7^10 beams dumped. Switch off Magnet. End of this period ~5800 multihadrons
We are not able to get Magnet below 1130 A (via comp. & via manual), phone K.

Run	Date	Start	Stop	Reflection NSD	Reflection MIP	Reflection TOF	⟨L⟩ $\times 10^{30}$	$\int$ Ldt Run	$\int$ Ldt Exp	IBM TAPE	BP [V]	T2 Rej. Ev T+(%)	Bhab.	MH	E_{beam}	Remarks

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8^05 Finally the magnet is off (Pellat means: bad contact)
Glendinning comes, leaves immediately again, since PKR tells they don't need anybody from the experiments.

19.4.82 15.05
HV-System changed
Forward μ-counters now are in mainframe 56. MFR 1 does not exist any more. MFR 56 is of the old type and should come on with the rest without special treatment.

24.4.82 K.H. Hellenbrand discovered that ID is at 31°C ! The magnet water is running at 61°C and nobody told us. If the chambers are damaged this is the end of JADE
H. Rimberg
Moreover the cooling air pipe for the ID was squeezed in the power house.

26.4.82 The ID is counting ~~and~~ Rej.

Change in ID-System

DL8-clocks are now started by the same pulse as the DL8-Start. See Jet Chamber Book for details. (A. Wagner)

- cont'd on next page.

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 rej $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 $E_\gamma > 6$ GeV	T_2 Bit 17 $2T \cdot E_\gamma \cdot 2\pi$	Rejection NSD	Rejection MIP	Rejection TDF	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T2 Rej. Fr (%)	Bhab.	MH	E_{beam}	Remarks

30.4.82 **Preparation for next period**

MAY - PERIOD 1982

check of magnet by Mr. Pillat

Additional shielding for μ-chambers is built by Mr. Wobbe et al.

Lead glass switched on by Takeda and Minowa

Counting house vacuum cleaned by J. Olsson ! (Only half the room !)

Cosmic B=0 runs # 11021 both runs ended with T₁ timeout in branch 3, crate 2
11022 " " " " " " " "
Total 8346 events, not enough for

4014 screens interchanged. Faulty contact behind unit 34 soldered. Everything should be OK
Schmidtmann not available until Monday now.

Freigabe-Inhibit-Cable back on rear of HV-Supervision Box.

1-5-82
7⁰⁰ Felst the Karlsruhe people are still working in their cavity (superconducting)
but PKR is preparing luminosity runs within the next hour or two.
I go with my office R. Felst

9⁰⁰ Mr. Brixius notices that the air cooling of the inner detector doesn't work
standby temperature of the outlet water therefore reduced to 35°C by Mr. Kassen -K-
(before 58°). Water temperature when magnet is switched on,

16.30. Readjustment of Prepulse after Umbau in PKR. The Prepulse was 190 nsec too late.
At PKR they ~~have~~ can change it only in steps of ~~200~~ 20 nsec. So we set it 200 nsec
earlier and added 10 nsec of cable in front of the bunch marker decoder.

Beam information on TV screen is wrong: The PETRA measurement of P1 does
not work. It says 0 mA, but there is a bunch on the scope as good as the other.
(PETRA confirms this statements)

Remarks on cooling of Inner Detector.

The Zetro Cooling Machine is really down: Loss of cooling liquid.
We have to work for a few days without it.
At the present weather the cooling of the compressed air alone is sufficient to cool away the heat of either the preamplifiers OR of the magnet. Magnet and preamplifiers together must be operated only for short periods of ~ 6 hours.

To shift crews:
- Door of the hall has to stay open
- Switch on the magnet only for luminosity runs
- If we are running with magnet check every hour the temperature # 4 in the Rucksack (right, up).
  If $T_4 > 29°C$ we have to stop and turn down the magnet.

Heat exchanger: I found only water with 12°C which is about 2° to 4°C colder than the air. Who has a good idea (1.5 kW) ? Sunday

2.5.82 0⁴ A. Wagner (1. half) & K.H. Meier (2. half of shift)
still machine studies, probably until morning.
4.05 PETRA starts 'Lumi-Run' with 7.5 mA e^- and 3.1 mA e^+. They say
its only for testing. → Magnet stays off, only Tagging switched on
for Lumi measurements

8:00 Bell, Nozaki
10.30 New fill is ready.
10.40 Beam lost
12~~30~~ Run 11038 start. Micro 276. $E_{beam}=0$ } ⇒ should be deleted from
12~~33~~ Run 11039 " on $E_{beam}=0$ } tape
12.36 Beam energy is sent from PETRA now. $E_0 = 17.243$ GeV
Position current is low because only one bunch is running.
1316 On the TV screen, $E_{beam} = 17.243$ but below this it says:-
LUMINOSITY RUN
ENERGY: 17.30
* Also beam pipe current needs to be zeroed *

13.48 YSP1 ERROR T2 INPUT MISSING 101 102 103
MUON DIGITISERS MISSING 84 86 87 89 90 92 93
14.01 " " T1 O/P MISSING 5 6 7 101 102 103
14.17 " " T2 I/P MISSING 101 102 103

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Run	Date	Start	Stop	I+	I−	DT (%)	Time (s)	Rec out	All ×10⁶	T0 rej ×10⁶	T1 Acc Sum bit 1-16	T2 Acc Sum	T1 Bit 2 E1 >6GeV	T2 Bit 17 2T·E4·2Tr	NSD	MIP	TOF	⟨L⟩ ×10³⁰	SLdt Run	SLdt Exp	IBM TAPE	BP (V)	T2 Rej Ev Fr (%)	Bhab.	MH	E beam	Remarks
11038	2/5/82	12:20	12:22	3.88	8.42	9.2	339	360	30.5	2.8		275	25	74				—	—	—	IBM	–		~2	0	17.243	No MIPROC, BOSIET RUN
11040	2/5/82	12:34	13:27	3.00	6.52	5.7	3154	4187	820	46.9	1808	5594	641	6413	ON	ON	ON	4.79	15.1	15.1	IBM	–	59	202	10	17.3	STOPPED TO CHECK JET CHAMBER
11041	"	13:33	14:40	2.53	5.62	5.1	4007	4018	1042	53.3	2024	5746	624	944	ON	ON	ON	4.17	16.71	31.81	"	–	56	201	5	"	Beams dumped.
11045	3/5/82	3:28	5:01	2.95	8.20	6.8	5276	7091	1372	93.3	2963 ~~3877~~	9087	994	2099	ON	ON	ON	5.04	26.59	58.40	IBM	–	56	322	14	17.243	Beam lost.
11046	"	9:25	9:34					~720													F11184						} I.P. Pulser Gain, 2 pulses
11047	"	9:35	9:44					~720																			} Runs Gain, 3 pulses
11048	"	10:22	dummy run (wrong configuration)																		IBM	0.6				17.243	
11049	"	10:22	11:39	8.62	9.40	8.0	4558	8002	1187	94.7	3385	10651	1205	2869	ON	ON	ON	6.92	31.56	89.96	"	"	58	424	17	17.243	
11050	"	11:41	12:07	6.73	7.26	6.7	1421	2240	370	24.7	959	2936	344	674	"	"	"	5.96	8.47	98.43	"	0.55	58	112	5	"	run stopped because of LC HV problem
11051	"	13:17	13:24	5.25	5.79	90.3	← FWHM trigger was wrongly connected																				stopped because T2 rate was too high
11052	"	14:09	14:21	4.7	5.2	4.4	~~403~~ 407	875	184	8.2	371	986	115	149	"	"	"	4.0	2.83	101.26	"	"	57	27	1	"	
11053	3/5/82	16:08	17:14	6.74	7.81	10.7	3322	8002	864	92.6	2755	9374	1024	2687	ON	ON	ON	5.22	17.34	118.60	IBM	0.6	60	224	17	17.300	
11054	"	17.15	18.23	5.57	6.42	7.8	4082	8002	1061	82.9	3056	8858	1123	2047	ON	ON	ON	4.55	18.55	137.15	"	0.5	58	254	13	"	
11055	"	18.24	19.50	4.55	5.29	5.7	5162	8002	1343	77.2	3148	8908	1039	1611	ON	ON	ON	3.75	19.35	156.56	"	0.45	58	243	9	"	
11056	"	19.50	20.50	4.0	4.65	5.1	3566	5114	928	47.4	2051	5698	670	921	ON	ON	ON	3.12	11.12	167.62	"	0.35	58	128	1		Beams Dumped
11057	"	22.27	23:36	9.64	10.25	8.4	4113	8002	1070	90.1	3033	9614	1114	2570	ON	ON	ON	7.10	29.27	196.83	IBM	0.6	57	384	10	17.300	
M058	"	23:37	1:01	7.52	8.03	6.5	5046	8002	1312	85.0	3147	9628	1103	2234	ON	ON	ON	5.54	27.93	224.76	"	0.48	57	358	14	17.300	
11059	4/5/82	1:01	2:00	5.96	6.39	4.9	3507	4503	912	45.1	~~1844~~ 1847	5296	613	931	"	"	"	4.60	16.12	240.88	"	0.33	56	189	11	"	Beams dumped
11060	"	2:28	3:46	9.77	9.54	8.4	4400	8002	1146	96.7	2931	9774	1055	2501	ON	ON	ON	6.45	28.38	269.26	"	0.6	58	343	15	"	
11061	"	3:46	4:08	7.50	7.37	6.4	1306	2060	340	21.9	765	2503	269	~~568~~	ON	ON	ON	5.35	6.99	27.625	"	0.45	58	88	2	"	stopped because of "no triggers"
11062	"	4:12	5:16	7.00	6.87	5.8	3864	5752	1005	58.3	2086	6758	740	1319	ON	ON	ON	4.44	17.16	293.41	"	0.40	55	206	6	"	
11063	"	7:27	8:34	9.84	10.38	8.6	4032	7532	1050	90.4	2874	8968	586	2398	ON	ON	ON	7.14	28.78	322.19	"	0.52	57	367	9	"	
11064	"	8:35	9:48	8.04	8.51	8.0	4377	8002	1139	91.1	3066	9583	1095	2370	ON	ON	ON	7.20	31.58	353.69	"	0.52	57	399	14		
11065	"	9:49	11:22	5.19	5.57	6.1	5559	8002	1446	88.3	3250	9315	1119	1962	"	"	"	5.71	31.72	385.41	IBM	0.37	57	401	12	"	
11066	"	11:26	11:27	5.14	5.53	4.3	27	42	7.1	0.3	13	37	4	38	"	"	"	4.72	0.13	385.54	"	0.3	62	1	0	"	stopped for transformer repair
11067	"		stopped after 2 events due to MIPROC error																								only 2 events — MP-16 error.
11068	"	13:39	13:43	10.19	10.21	10.6	239	825	62.4	6.6	174	580	65	167	ON	OFF	ON	8.38	200	387.54	IBM	055	0	20	0	"	stopped to reload MP-16.
11069	"	13:46	15:05	1007→446	1009→557	8.9	4435	8002	1154	103	3051	9690	1083	2697	ON	ON	ON	6.67	29.58	417.12	IBM	055	57	384	7	"	½beam lost at 14:45
11070	"	15:06	15:269	4.25	5.33	4.3	1375	1612	358	15.4	655	1892	198	280	"	"	"	3.80	5.23	422.35	"	0.2 0.65	56	60	1	"	stopped by YCLRTV problem.
11071	"							39			ignore — there YCLRTV problems																
11072	"	21:02	21:08	10.84	10.50	10.6	338	794	88	9.4	282	955	100	323	"	"	"	8.08	2.23	425.08	IBM	0.64	0	35	0	"	
11073	5.5.82	1:55	2:23	8.93	9.07	11.2	1585	3744	412.5	46.1	1178	4747	436	1531	ON	ON	ON	6.97	11.04	436.12	IBM	0.55	59	152	2	17.300	beams lost
11074	"	5:12	6.38	5.13	7.03	6.3	5217	8002	1357	85.3	2970	9610	1037	2172	ON	ON	ON	4.69	24.47	460.59	"	0.35	58	294	9	"	
11075	"	6.38	7.36	4.53	6.30	6.0	3469	5222	902	54.5	1957	6215	673	1331	"	"	"	4.09	14.19	474.78	"	0.3	58	179	4	"	Beams Dumped

17,243 at Run Summ. 157

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 rej $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 $E_\gamma > 6$ GeV	T_2 Bit 17 $2T \cdot E_\gamma \cdot 2\pi$	Rejection NSO	Rejection MIP	Rejection TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T2 Rej. Ev. Fr (%)	Bhab.	MH	E_{beam}	Remarks

2/5/82 14.40 ~~Beams dumped~~

15.52 Problem with crate 8 Morning seems to be cured. The SCC kept hanging so tried moving card around etc → ~~It~~ no effect. Swopped SCC's in crates 8 ↔ 12 and all seemed well so swopped the ROM's too and still OK.

16.00 Dittmann & Takeda on shift

17.30 PETRA cannot get anything into 1 e^+ bunch
Magnet down to 5000 A, temperature T_4 24.9°

18.30 T_4 = 24.9°

19.30 T_4 = 25.0°

20.00 Magnet down to 2000 A.

20.30 T_4 = 25.1°

21.30 T_4 = 25.1°

22.25 Magnet down to 500 A

22.30 T_4 = 25.3°

Hole in T_2-histogram: Trigger cable of segment 2 (Ring 4) was disconnected. Now plugged in. Rdg.
Wires # 816-831

Magnet temperature: This afternoon when the magnet was about 2 hours at 7500 A, the output-temperature was 61°C and the input temperature 29°C. → Mean temperature is 15°C lower than the normal stand-by and running temperature. This helps to run some time without Zetro. R

23.30 T_4 = 25.3°

23.53 TV says "VAKUUM LECK. START NICHT VOR 1.00 UHR"

3.5.82 0.04 A. Wagner + I. Gleudinning
no beams, no IBM, no sleep, no nothing

3.00 "switch on HV", but still only one positron bunch
Magnet up to 7500 A
large fluctuations in beampipe current, then all of a sudden signal disappears nearly

try to start run 11042: nothing but problems: error in HV-system (see next pg)
NSO busy ← can only be cured by restarting N10

3.28 finally get going

to be fixed by the dayshift:
- repeated error: LG/BP HV-Controller: no response
  LG/BP Powersupply 14 HV = 1.981 should be 1971
- could beampipe meter be adjusted such that it reads reasonable values?
- FWMU - trigger bit missing

5.05 short breaks ...

5.30 Magnet down to 2000 A - no immediate prospect of beam.

5.40 Injection!

5.50 Magnet up to 7500 Amps.

9.00 Yamada & Lords on shift

10.20 Luminosity with one e^+ bunch
HV problems ~~not~~ corrected, beampipe meter adjusted
FWMU trigger bit still missing.
"Trigger 3 Output" dominated by only

11.20 on LG/BP HV read error. The error is not
But main sources all show proper HV. ~~read~~
end caps & Ring 2&3. They are all corr
worked properly. → LG HV read out for dis

12.40 FWMU T2-postpone cable hangs in the air.
T1-postpone is made.
LG: Barrel HV error: due to a short circuit in one of the BR.LG. # ~~It~~ is disconnected since Run 11052

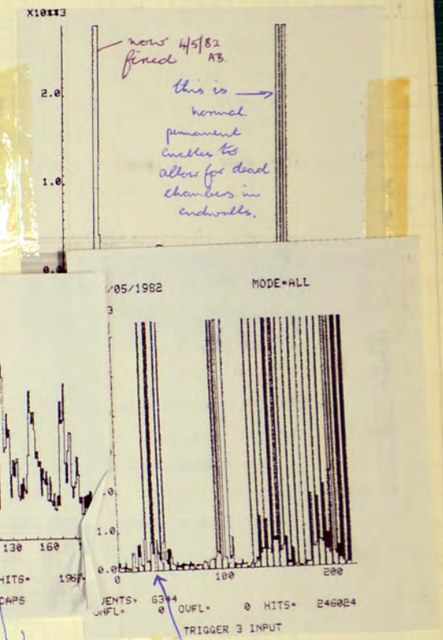
16.00 Clarke and Hellenbrand on shift

16.15 HV READ ERROR cured by Yamada (one LG-block dead)

16.40 TRIGGER 3 I/P MISSING ST 6 GP 5 ACKNOWLEDGE-ERR ← ST 6 GP 5 means Street 6, group 5 (temporarily) can be ignored, as Austin Ball says

HV WRONG } Event display looks reasonable
HV READ ERROR }

18.07 JDAS-ERR, TIMEOUT branch 7 crate 3



19.00 Zetro cooler is working again. No restrictions on magnet current on-time any more. Magnet temperature will be raised tomorrow by experts. Rdg

19.32 PKR say that they have problems with PETRA, advise us to keep on running even though luminosity is low.

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 rej $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 $E_\gamma > 6$ GeV	T_2 Bit 17 $2T \cdot E_\gamma > 2$ GeV	Rejection NSO	Rejection MIP	Rejection TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T2 Rej. Eff. (%)	Bhab.	MH	E_{beam}	Remarks

2/5/82 14:40
~~14:48~~ Beams dumped
15:52 Problem with crate 8 Missing seems to be cured. The SCC kept hanging so tried moving card around etc → no effect. Swapped SCC's in crates 8 ↔ 12 and all seemed well so swapped the ROM's too and still OK.
16:00 Dittmann & Takeda on shift
17:30 PETRA cannot get anything into 1 e^+ bunch
Magnet down to 5000 A, temperature T_4 24.9°
18:30 T_4 = 24.9°
19:30 T_4 = 25.0°
20:00 Magnet down to 2000 A.

20:30 T_4 = 25.1°
21:30 T_4 = 25.1°
22:25 Magnet down to 500 A
22:30 T_4 = 25.3°

Hole in T_2-histogram: Trigger cable of segment 2 (Ring 4) was disconnected. Now plugged in. Rdg.
Wires # 816-831

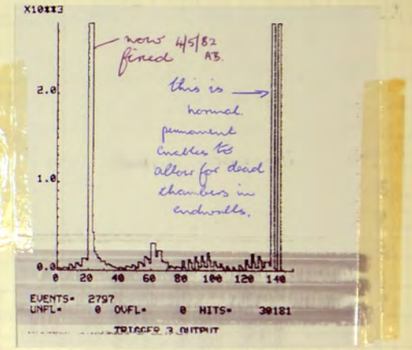
Magnet temperature: This afternoon when the magnet was about 2 hours at 7500 A, the output-temperature was 61°C and the input temperature 29°C. → Mean temperature is 15°C lower than the normal stand-by and running temperature. This helps to run some time without Zetro. R

23:30 T_4 = 25.3°
23:53 TV says "VAKUUM LECK. START NICHT VOR 1.00 UHR"

3.5.82 0:4 A. Wagner + I. Hendrikuiz
no beams, no IBM, no sleep, no nothing
3:20 "switch on HV", but still only one positron bunch
Magnet up to 7500 A
large fluctuations in beampipe current, then all of a sudden signal disappears nearly
try to start run 11042: nothing but problems: error in HV-system (see next pg)
NSO busy ← can only be cured by restarting NJ10
3:28 finally get going

to be fixed by the dayshift:
- repeated error: LG/BP HV-Controller: no response
LG/BP Powersupply 14 HV = 1.981 should be 1971
- could beampipe meter be adjusted such that it reads reasonable values?
- FWMU - trigger bit missing
5:05 short breaks....
5:30 Magnet down to 2000A - no immediate prospect of beam.
5:40 Injection!
5:50 Magnet up to 7500 Amps.

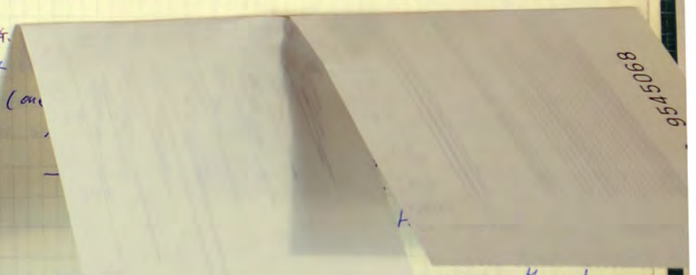
9:00 Yamada & Lords on shift
10:20 Luminosity with one e^+ bunch
HV problems not corrected, beampipe meter adjusted
FWMU trigger bit still missing
"Trigger 3 Output": dominated by only a few channels →



11:20 on LG/BP HV read error. The error is not cured yet
But main sources all show proper HV. ~~read~~ HV for each counter is examined for the end caps & Ring 2&3. They are all correct. The read out prog. as well as the Dig. Val. mat. worked properly. → LG HV read out for distributer #14 doesn't ~~work~~ always work.

12:40 FWMU T2-postpone cable hangs in the air. I have put it at the same place, where the T1-postpone is made.
LG: Barrel HV error - due to a short circuit in one of the BRLG ~~#~~ ~~#~~ ~~#~~ ~~#~~ set is disconnected since Run 11052
16:00 Clarke and Hellenbrand on shift
16:15 HV READ ERROR cured by Yamada (on
16:40 TRIGGER 3 I/P MISSING ST 6 ~~6~~ 5
HV WRONG } Event display
HV READ ERROR } looks reasonable
18:07 JDAS-ERR, TIMEOUT branch 7 crate 3

19:00 Zetro cooler is working again. No restrictions on more. Magnet temperature will be raised tomorrow by experts. Rdg
19:32 PKR say that they have problems with PETRA, advise us to keep on running even though luminosity is low.



96450698

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 rej $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bid 2 $E_\gamma > 6$ GeV	T_2 Bid 17 $2T \cdot E_\gamma 2\tau$

4-May-1982

0:00 Warming and Odaka on shift

2:00 Beams are dumped.
:25 New Fill
:56 "JDAS ERROR - TIMEOUT branch 3 crate 2"
~~1:55~~ and then "JDAS ERROR 45 SUBERROR 1 TASK 1"
:58 ID-tripp, Anode Current.
3:02 "JDAS ERROR - TIMEOUT branch 2 crate 3"
4:06 "NO triggers", no reason found, we start a new run
5:15 Beams dumped
6:00 Trouble in the Synchrotron
7:25 New fill

8:00 Ball, Matsumura
8:35 No Triggers stopped RUN
8:47 IDAS Error Time Out branch 2 crate 3
11:20 LINAC problems, impossible to refill at present. Also transformer has oil leak + damaged cable.
Pellat wants to switch off as soon as possible, so we will stop run + switch off as soon as he is ready
Luminosity is $\sim 5 \times 10 \times 30$. They decide to stop just after we start new run 11066. Only 42 nuts to IBM.
11:30 Run down magnet.
11:50 Beams dumped : 'Lange Unterbrechung'
13:33 Transformer now repaired. Optimising new fill
13:37 Try to start run 11067 - get MIPROC NO RESPONSE. Switch off MIPROC-16+ start run 11068.
Stop run 11068 after 825 records out + do MIPROC INITL LOAD, switch MIPROC-16 on and
start run 11069 - all OK.
14:45 ID trip - reset OK. ½ beams lost.
New fill requested for 15:15. - OK by us - the sooner the better $\mathcal{L} \sim 3 \times 10 \times 30$.

Message from Pilot:
THERE WILL BE A 4 HOUR ACCESS TOMORROW, probably starting about 12:30

15:30 Sudden error in YCLRTV. stop run.
error 14 in 34643 at 70556 - outside segm. bounds.
repeated at run stop, and again on trying to reload JDAS. Reload NORD - although it hasn't hung-up.

Rejection NSD	MIP	TOF	$\langle \mathcal{L} \rangle$ $\times 10^{30}$	$\int \mathcal{L} dt$ Run	$\int \mathcal{L} dt$ Exp	IBM TAPE	BP [V]	T2 Rej. Ev. Fr (%)	Bhab.	MH	E_{beam}	Remarks

As soon as we try to start a run, get ~~same~~ more problems with YCLRTV.
This time error 29 in 34643 at 104634 file system error file error ~~code~~ number 10
error code outside range! Reload NORD again - but then all remaining beam lost. ID trip.
Inform Cords, who re-builds(?) YCLRTV.

16:00 Dietrich & Konzaki
20:00 Still "INJECTION".
20:59 New filling ready. Start run 11072
21:10 Beams lost. Only 10 min!

5-MAY

0.00 Bethke & Clarke
1.45 luminosity.
High background - found B.P. counter 21 to be giving very high rate
1.55 Run 11073 started.
Time out Br 7 Cr 3
7:25 Beams lost
5:12 new fill, start run 11074

8:00 D. Cords and H. Riesberg on shift

8.24 Run 11076 started
8.28 no triggers, all events → postpone, no white lamp on Kalbach's trigger box
8.29 When starting new run, beams lost.
9.40 good news filling ready, start R 11079
10.55 R 11080 started
12.24 R 11081 started
12.55 Tasso announces: Beam dumps at 13.00. Access till 17 or 18.
13.00 Beam dumps. Continue with Cosmic runs.

Problems with Muon crate 12 : Clock frequency is too high (alpha beam) Rows. Endangers of card, has no effect. Crate noisy + prone to 'missing responses'.

Temporary access
Additional shielding is built up by MEA to make μ-chamber repair possible during beam on-time.
-Z: 10 metric tons added, +Z: 20 metric tons of weight added.

Run	Date	Start	Stop	I_+ at Run start	I_- at Run start	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 rej $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 $E_4 > 6$ GeV	T_2 Bit 17 $2T \cdot E_4 \cdot 2\pi$	Rejection NSO	Rejection MIP	Rejection TOF	$\langle L \rangle \times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T_2 Rej Ev Fr (%)	Bhab.	MH	E_{beam}	Remarks
162																											163
11076	5.5.82	8.24	8.28	9.13	9.78	49.1	191	196	49.9	24.1	69	201	27	62	on	on	on	3.53	0.67	475.45	IBM	0.57	52	11	1	17.300	only 1 trigger, no run sum. Beams lost
11077	"	8.29	8.30					14													F11 146						Cosmics B = ø
11078	"	9.02	9.06	0	0		247	307				9780	1082	2682							IBM	0.65	59	333	13	17.300	
11079	"	9.43	10.54	10.2	10.1	8.2	4283	8002	1114	91.8	3052	9727	1002	2301	ON	ON	ON	6.65	28.47	503.92	"	0.51	58	323	14	"	
11080	"	10.55	12.24	8.3	8.3	7.4	4983	8002	1298	96.2	3050	9727	1002	2301	ON	ON	ON	5.66	28.21	532.13	"	0.51	58	323	14	"	
11081	"	12.24	12.58	6.72	6.66	6.1	1875	2736	488	30.0	1101	3268	371	702	ON	ON	ON	5.42	10.17	542.30	"	0.40	58	118	4	"	
11082-85	"	13.09	16.22	0	0			8588													F11 180						Cosmics B = Ø
																					F11 133						"
11086	4	16.22	17.08					3082																			
11087	"	21.12	22.14	8.8	8.43	9.0	3690	8002	960	86.8	2945	9339	1027	2853	ON	ON	ON	8.27	30.52	572.82	IBM	0.9	54	412	16	"	tape for P. Steffen & Helsinki
11088	"	22.18	23.30	7.24	6.88	8.2	4301	8002	1119	92.2	3134	9778	1134	2890	ON	ON	ON	7.28	31.30	603.12	IBM & F11143	0.6	57	370	8	"	
11089	"	23.30	0.57	6.02	5.70	6.0	5124	8002	1333	79.7	3048	9271	1067	2285	ON	ON	ON	6.04	30.95	634.07	IBM	0.4	53	346	9	"	Beams dumped
	5.6.82																										
11090	0.57	0.57	→ forgot it, beam dump after 13 sec (33 kA)																								
11091	6.5.82	1.59	3.09	8.54	7.96	8.1	4210	8002	1095	88.5	3097	9572	1116	2585	ON	ON	ON	7.24	30.49	664.56	IBM	0.6	58	368	16	"	
11092	"	3.10	4.30	7.06	6.55	7.0	4749	8002	1235	86.5	3070 3577	1081	2367	ON	ON	ON	6.43	30.52	695.08	IBM	0.55	57	387	10	"	
11093	"	4.31	5.32	6.19	5.71	6.0	3682	5558	958	57.0	2190	6600	785	1341	ON	ON	ON	5.78	21.26	716.34	IBM	0.45	56	248	7	"	Beams dumped
11094	6.5.82	6.18	7.25	8.30	8.12	8.7	4027	8002	1047.9	90.9	3040	9684	1080	2827	ON	ON	ON	7.6	30.61 21.87	746.95	IBM	0.60	58	363	14	"	
11095	"	~~7.25~~ 8.31	8.31	7.12	6.96	7.3	3943	6534	1026	75.2	2574	8443	957	205	"	"	"	6.4	~~23.57~~	771.82	"	0.50	57	347	10	"	NORD - crash, ~~no Run Summary~~
11096 – 11097		jülich																									
11098	"	10.53	11.11	8.81	8.61	12.0	1084	2907	282	33.7	761	3514	278	1261	"	"	"	6.17	6.68	778.50	"	0.6	54	78	5	"	
11099	"	11.41	12.10	7.73	7.52	13.0	1701	3650	442	59.7	1037	4364	387	1296	"	"	"	4.93	8.38	786.88	"	0.5	52	121	2	"	
11100	"	12.10	12.58	7.22	7.01	8.8	2893	5614	753	66.2	1693	7018	579	1977	"	"	"	4.20	14.18	801.06	"	0.5	57	158	4	"	Beams dumped
11101	"	13.46	14.45	10.51	10.44	11.8	3472	8002	903	106.2	2614	10583	971	3567	"	"	"	6.69	23.22	824.28	"	0.85	60	317	7	"	
11102	"	14.45	15.47	8.62	8.64	9.7	3708	8002	965	93.8	2708	10253	1027	3130	"	"	"	6.85	25.41	849.69	"	0.65	58	343	10	"	
11103	"	15.47	16.04	7.20	7.22	14.8	980	1654	255	38	616	2064	214	2379	"	"	"	5.91	5.80	855.49	"	0.47	59	63	2	"	Nord unable *
11104	"	16.04	16.20	6.91	6.92	7.4	865	1571	225	17	570	1923	192	2196	"	"	"	6.21	5.37	860.86	"	0.40	56	54	3	"	IBM unable
11105	06	dummy													"	"	"										
11107	"	16.30	16.45	6.75	6.76	6.4	683	1144	172	11	409	1339	150	1036	"	"	"	5.73	3.91	864.77	"	0.40	54	53	2	"	
11108	"	16.47	17.03	6.28	6.30	6.3	965	1525	251	15.8	579	1842	231	475	"	"	"	5.60	5.40	870.17	"	~~0.40~~	58	73	1	"	Beams dumped
																					0.78						Run summary lost
11109	"	17.03	18.25	10.2	9.8										"	"	"	7.97	30.59	900.76	"	0.58	58	413	8	"	
11110	"	18.31	19.36	9.27	9.04	9.1	3837	8002	998	91.1	2970	9855	1151	3002	"		"	6.65	26.74	927.50	"	0.45	56	328	17	"	Beams dumped
11111	"	19.37	20.44	7.61	7.45	7.1	4020	7052	1046	74.7	2695	8227	981	2000	"	"	"						57				
11112	"	21.40	22.40	10.25	10.40	9.8	3586	8002	933	91.2	2986	9628	1087	2875	"	"	"	8.78	31.49	958.99	"	0.7	58	363	17	"	
11113	"	22.40	22.58	8.56	8.68	19.4	542	1091	140	27.3	402	1323	158	389	"	"	"	7.57	4.10	963.09	"	0.55	58	50	1	"	"no triggers" message - stopped run.
																											* Head bank has beam energy 17,178

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 req $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bid 2 $E_\gamma > 6$ GeV	T_2 Bid 17 $2T \cdot E_\gamma \cdot 2\pi$	Reflection NSD	MIP	TOF	$\langle L \rangle \times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T2 Rej. Ev. π^+ (%)	Bhab.	MH	E_{beam}	Remarks

5. May 1982

15 30 The problem of LG-High Voltage readout was fixed. M. Minowa
16.00 Nozaki & Ball on shift
Continue to take cosmic ray data.
17.00 Cosmic run end.
21.07 New fill is ready. High voltage of BP counters are checked and ~~reset~~ reset to the nominal values.
21:14 Background still high ~0.9, but start run 11087.
Initial high dead time (15%) and high FWHM rate fall within ~2 mins. DT now 10%.

21:15 Problems with muon crate 12 now solved. There were 2 faults: — incorrect clock frequency.
— distorted, low amplitude start pulse (due to damaged cable).
Krehbiel phoned from holiday to check all was OK.
22:20 Run 11087 ended. Start run 11088 to IBM AND TAPE (Fill 143). Tape for Steffen + Helsinki.
23.16 JDAS ERROR Time out branch 5 crate 4.
23:30 Run 11088 ended 8002 events. Start run 11089 to IBM only.
Histograms for 11088 look OK.
24:00 Betike u. Dietrich
6.5.82
6:45 no problems up to now. Start new runs every ~80 min.
even standard histograms are o.k.
7:57 Still no problems!!
8:00 Kobayashi, Uriett
Comparing old and new standard histograms I notice a difference in "TRIGGER 1 OUTPUT" since the beginning of this data taking period. There are now entries in the bins 17–23 which have previously been empty.
What do they stand for? some counts multiplicity It is the TBG Normal (Non neighbour-suppr.) Multiplicity.
8:31 NORD-crash, message on line-printer: ERROR 24 in 34643 at 1; RING VIOLATION
we stop Run + start new one: the TV-screen is no longer updated.
Restarting program / reloading NORD does not help. error occurs after ~60 triggers each time.
We give up + inform D. Cords
YCLRTV, the clean TV program, was corrupted again:
⇒ this can be cured by MODE YDAS,, under user RT.
12:10 "No Events for ---". Stop Run 11099 and restart a new run.
13:00 Beams dumped.
14:30 There will be an access-time for about 30 minutes starting at about 9 am, tomorrow.
(according to PLUTO's request)

16"-24^{00} Glendinning, Pelem

16^{04} "no trigger for ... sec"! was stopped and started new!
16^{30} trouble with IBM Link and also Petra information link down!
phoned to IBM and PKR.
18:27 NORD hung at level 3 - Reloaded.
22:55 Run 11113 had to be stopped because 'no events for nnn seconds - no triggers' - this seems to have happened quite a few times today for no apparent reason ....

7.5.1982

0:00 Ball & Minowa
~~80:47~~ Run 11115 in progress. Refill suggested by Lasso for 20 mins ago has not materialised.
00:55 Finally stop run 1115 & dump beams.
02:01 New fill ready. Start run 11116.
03:01 Start run 11117.
04:09 Start run 11118. Histograms for 11117 look ok.
05:18 Start run 11119.
New fill for 06:00.

~~06:50~~
06:25 New fill ready.
06:50 Time out branch 5 crate 6. Stop the run.
Start new run. The same errors happen many times again.
press „Z" button of CCA in the crate 6 (branch 5) and start new run.
Now the error is gone.
07:50 Timont BRZ C5. leads to temporary 'no triggers more'. now OK again.

08.00 Clarke & Takeda on shift

08.55 Run 11123 stopped - lost triggers. Restarted and got IBM error 54.
12.00 Beams on.
ID trip when switching HV on. BP ~0.8. Tried several times with no success
Hr Rieneberg called in. He changed cable to Thyristor Alarm I/P' - problem solved.

13:05 Beams lost. ID tripped.

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 rej $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 12 $E_\gamma > 6$ GeV, 2T · E_γ · 2τ	T_2 Bit 17	Rejection NSO	Rejection MIP	Rejection TOF	$\langle L \rangle$ $\times 10^{30}$	$\int$ Ldt Run	$\int$ Ldt Exp	IBM TAPE	BP [V]	T2 Rej. Ev. Fr (%)	Bhab.	MH	E_{beam}	Remarks

15:45 During RUN 11126, error messages on dot printer

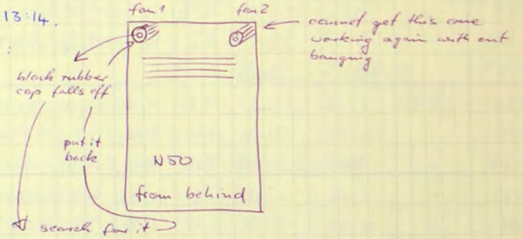
(PAGE FAULT FOR NON-DEMAND ... 3 times
OUTSIDE SEGMENT BOUNDS.
~~At se~~ Data taking keeps running.
RING VIOLATION.
IOX ERROR MANY TIMES. & "NO TRIGGERS" on TV screen.
STOP RUN.
RUN summary lost.

16:00 Wriedt, Meier
16.05 Beams lost
Nord: operating system generated and all data acquisition tasks built D.C.
16:55 IBM-transfer error, re-linking helped
17:15 ID trip: fast shorts current & slow HV output, the latter had to be reset separately, not via the green button.
17:42 Slow-dus of ID due to high current
19:52 no triggers -> ok after starting new run
21.13 3 BP-cables re-connected to the BP-meter -> current is still low (even at the start of a filling)
23.15 Just after starting rugn 11135 the beams were lost -> r.s. is lost
23.35 The top-left fan of the NORD-50 suddenly started to produce terrible noise. After stopping the system we removed the back-plate of the computer and found that the fan was very hot. After turning some screws the fan seemed to run smoothly. Nevertheless some expert should have a look to it. After switching on the NSO again we had to restart N10 and reload JOAS.

Sat. 31.01. 0^{55} Matsumura, Duerdoth.
0^{58} IBM LINK Error - it terminated the run. There had been many IBM BUSY; for upto 17 secs. start next run - is ok.
2^{40} JOAS Error TIMEOUT Branch 2 Crate 3
3^{00} beams dumped — during this fill the B.P. counters never fell below -7V.
3^{40} New Fill
4^{30} JOAS Error TIMEOUT Branch 7 Crate 3 (4 times).

08:00 Ball, Dittmann

08:50 3 timouts branch 7 crate 3.
09:18 suddenly get 'NO TRIGGERS'. OK after starting new run 11142.
09:51 Stop run 11142 to dump beams.
10:22 New fill ready. Start run 11143.
11:01 'NO TRIGGERS' again, cured by manually re-initialising run on trigger box. We then got BR2 C5 timout + run continued normally.
Inspection of NSO-fans leads to more problems. They must get repaired, when beams are off for some time
11:20 Start run 11144. Histograms OK for 11143.
12:02 Once again 'hung' with 'no triggers'. This time try re-initialising run on trigger box without switching to manual. Doesn't work at first, but after once again pressing all available buttons in a random fashion, everything starts working again! Once again get BR2 C5 timout. Trigger box was stuck on T1 postpone.
12:10 As above, but this time we find the magic sequence i.e. 'stop run', then, 'reset event', then 'run': wait ~ 2 seconds
12:28 Start run 11145
12:45 Slow-ans of inner detector. High beam-pipe current for about 30s
12:56 TASSO suggest new fill in 20 mins. Dumped beam at 13:14.
15:30 NSO fan died again with terrible noise fixup:
(power 'off' is not necessary, keep running)
If you can't fix it, then block it. There are many more fans in, but almost nothing else.



16:00 Wagner & Odaker

16:19 Beams dumped - < 18:05 New Fill, HV on
18:08 ID trip
Run 11148 with FADC readout

Run start:
F8
readout pattern: 777748
μ-chamb digit: Ø
default trig source: NO
trigger source 2400B
trigger action override: Ø
Max No of Events: 8000

19:14 "No Trigger" → Run 11148 terminated, and then started Run 11149.
The magic sequence which was found by last shifters did not help us.

Run	Date	Start	Stop	I+ at Run Start	I− at Run Start	DT (%)	Time (s)	Rec out	All ×10⁶	T0 rej ×10⁶	T1 Acc Sum	T2 Acc Sum	T1 Bit2 E1>6GeV	T2 Bit 17 2T·E4·2τ	Rejection NSD	Rejection MIP	Rejection TOF	⟨L⟩ ×10³⁰	∫Ldt Run	∫Ldt Exp	IBM TAPE	BP [V]	T2 Rej Ev Fr (%)	Bhab.	MH	E beam	Remarks
11114	6.5.82	22:50	0:01	8.31	8.43	8.0	4231	8002	1101	87.8	3130	9439	1099	2591	ON	ON	ON	7.85	33.20	996.29	IBM	—	57	395	13	17.300	
11115	7.5.82	0:01	0:53	6.09	6.20	6.3	3134	4972	816	51.6	2010	5833	713	1381	"	"	"	6.59	20.65	1016.94	"	0.4	56	257	7	"	beams dumped
11116	"	02:01	02:59	8.85	8.69	11.3	3463	8002	901	102	2599	10176	995	3312	"	"	"	7.28	25.23	1042.17	"	0.7	59	290	9	"	
11117	"	03:00	04:10	8.84	8.68	8.6	4170	8002	1085	93.6	2800	9874	516	2532	"	"	"	6.29	26.23	1068.40	"	0.55	58	309	10	"	
11118	"	04:10	05:18	7.36	7.21	8.8	4095	8002	1066	93.6	2600	10353	482	2887	"	"	"	5.98	24.50	1092.90	"	0.4	59	301	6	"	
11119	"	05:19	05:56	5.61	5.52	7.7	2249	3835	585	45.0	1315	4929	469	1328	"	"	"	5.20	11.69	1104.59	"	0.4	58	146	3	"	beams dumped
11120	"	06:27	06:50	10.41	10.39	12.4	1346	2856	350	43.4	1038	3453	388	1114	"	"	"	7.97	10.72	1115.31		0.65	59	124	5	"	
11121							no events															0.6					no events
11122	"	6.57	7.57	8.08	8.04	10.8	3628	8002	943	101	2638	10084	1018	2859	"	"	"	7.08	25.68	1140.99	"	0.5	59	330	13	"	
11123	"	7.59	8.55	7.04	7.03	10.1	3340	6130	869	87.9	2136	7685	821	1931	"	"	"	6.28	20.98	1161.97	"	0.4	59	224	10	"	Lost triggers, beams dumped
11125	"	12:20	13:05	10.18	9.82	9.2	2508	5414	652	59.9	2051	6436	744	2022	"	"	"	8.17	20.50	1182.47	"	0.5	57	267	10	"	Beams lost
11126	"	15:33		10.81	10.26			2445													"	0.7				"	Beams lost
11127	"	16:46	17:53	8.7	8.4	11.6	3627	8002	943	109	2967	9805	1085	3101	"	"	"	8.66	31.42	1213.89	"	0.6	59	364	12	"	
11128	"	17:53	19:04	8.7	8.4	8.7	4100	8002	1066	93	2984	9596	1073	2785	"	"	"	7.53	30.88	1244.77	"	0.6	57	356	12	"	
11129	"	19:04	19.52	7.2	7.0	6.3	2839	4710	739	46	1955	5132	695	1123	"	"	"	6.88	19.55	1265.32	"	0.3	55	254	7	"	
11130	"	19.53	20.43	5.7	5.5	5.4	2990	4246	778	42	1739	4893	633	915	"	"	"	5.87	17.56	1282.88	"	0.2	57	207	6	"	Beams dumped
11131	"	21.08	22.11	9.9	10.7	9.9	3634	8002	945	94	2905	9508	1045	2588	"	"	"	8.99	32.65	1315.53	"	0.6	58	388	8	"	
11132	"	22.11	23.15	8.2	8.8	9.0	3810	8002	992	89	2913	9388	1104	2405	"	"	"	7.88	30.02	1345.05	"	0.6	58	383	11	"	
11133	"	23.15	23.15					1	sum	summary		lost										0.5					Beams lost
11134	8.5.82	0:18	0:58	11.8	11.1	14.2	2373	5577	618	88	1962	6858	707	2192	"	"	"	8.51	20.20	1365.25	"	.85	60	246	10	"	IBM link error
11135	"	0:59	2:05	9.94	9.32	9.1	3936	8002	1024	93	2906	9722	1105	2643	"	"	"	7.63	30.04	1395.29	"	.73	58	379	12	"	
11136	"	2:06	2:57	8.18	7.66	16.0	3025	8002	661	126	2197	12640	848	5948	"	"	"	6.11	18.47	1413.76	"	.70	60	257	8	"	Beams dumped.
11137	"	3:47	4:43	10.8	11.2	11.7	3287	8002	857	101	2830	9357	1072	2633	"	"	"	8.80	28.02	1442.78	"	.86	57	368	10	"	
11138	"	4:43	5:56	8.68	8.99	7.8	4333	8002	1127	88	3078	9345	1194	2675	"	"	"	7.19	31.16	1473.94	"	.62	58	385	6	"	
11139	"	5:56		7.15	7.43	7.5	276	541	72	5.4	202	557	18	133	"	"	"	7.13	1.97	1475.91	"	.6	56	31	3	"	Beams dumped
11140	"	7:23	8:36	11.0	8.7	8.0	4320	8002	1124	90	2920	9549	1099	2334	"	"	"	6.3	27.36	1503.27	"	.68	57	383	15	"	
11141	"	8:38	9:18	9.21	7.19	10.8	2431	4165	633	68.3	1459	4939	550	1137	"	"	"	5.42	13.17	1516.44	"	0.6	56	161	8	"	stopped after 'no triggers'
11142	"	9:19	9.49	8.45	6.54	7.0	1756	2967	457	32.0	1098	3468	404	743	"	"	"	5.30	9.30	1525.74	"	0.55	58	131	4	"	Beams dumped
11143	"	10.21	11.20	10.2	11.0	11.5	3505	8002	912	105	2820	9635	1065	2748	"	"	"	8.0	27.89	1553.63	"	0.7	59	351	16	"	
11144	"	11:20	12:28	7.14	7.63	10.3	4031	8002	1049	108	2866	9495	1075	2301	"	"	"	6.57	26.49	1580.12	"	0.7	58	310	10	"	
11145	"	12:28	13:14	7.1	7.6	7.9	2147	3919	558	44	1399	4609	513	1046	"	"	"	5.7	12.24	1592.36	"	0.55	58	134	2	"	
11146	"	14:42	15:46	8.6	11.8	9.2	3824	8002	995	92	2795	9857	1023	2771	"	"	"	7.0	26.97	1619.33	"	?	58	331	9	"	
11147	"	15:47	16:19	7.07	9.90	8.3	1894	3730	493	41.1	1377	4455	502	1113	"	"	"	6.39	12.11	1631.44	"	0.57	60	157	5	"	Beams dumped
11148	"	18:08	~~18:14~~	~~10.76~~	~~10.76~~	10.88	11.0	3464	7245	901	99.1	2540	8747	949	2450	"	"	"	6.96	24.09	1655.53	"	0.7	58	284	15	"	with FADC

Run	Date	Start	Stop	at Run Start I_+ (mA)	at Run Start I_- (mA)	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 rej $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 1+2 $E_1 > 6$ GeV	T_2 Bit 17 $2T \cdot E_4 \cdot 2t_T$	Rejection NSD	Rejection MIP	Rejection TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T_2 Rej. Fr. Fr (%)	Bhab.	MH	E_{beam}	Remarks
11149	8.5.82	19:17	20:35	8.68	8.64	9.3	4516	8479	11.75	109	3137	9869	1166	2368	ON	ON	ON	7.07	31.92	1687.45	IBM	0.57	58	424	16	17.300	with FADC
11150	"	20:36	21.37	7.15	7.29	8.4	3530	5815	918	77.5	2186	6847	814	1418	"	"	"	6.00	21.18	1708.63	"	0.60	58	281	6	"	with FADC beams dumped
11151	"	22:52	23:15	10.61	10.96	10.6	1332	2782	347	36.8	1102	3045	421	784	"	"	"	8.19	10.90	1719.53	"	0.8	57	134	5	"	with FADC beams lost
11152	9.5.82	6:04	6:07	11.16	11.29	9.6	R6	311	33	3.1	111	278	29	87	"	"	"	8.22	1.04	1720.57	"	0.7	47	13	0	"	" FADC - stopped due to TIMEOUT's.
11153	"	6:29	6:39	10.30	10.34	11.0	445	1032	115	12.7	362	1032	135	263	"	"	"	9.34	4.15	1724.72	"	0.65	50	45	2	"	" FADC, without channels 552-559
11154	"	6:40	7:05	9.96	10.00	10.5	1437	3209	373	39.4	1168	3459	433	912	"	"	"	9.15	13.15	1737.87	"	0.6	52	162	3	"	" " " " " "
11155	"	7:03	7:53	9.20	9.22	9.2	2713	5301	706	65.2	2021	5571	718	1365	"	"	"	8.37	22.31	1760.58	"	0.5	52	263	14	"	" " " " " "
11156	"	8:29	9:59	7.47	7.48	7.2	5377	8509	1400	101.3	3525	9460	1393	1458	"	"	"	6.77	36.42	1797.00	"	0.4	57	458	13		" " " beams dumped
11157	"	11:12	12:13	10.13	11.73	9.9	3609	8002	939.6	92.7	2753	9860	992 1937	2824	"	"	"	7.67	27.68	1824.68	"	0.8	59	324	14	"	
11158	"	12:13	13:15	8.52	9.95	9.7	3577	8002	930.7	90.1	2671	9788	2695	2695	"	"	"	6.88	24.62	1859.30	"	0.7	59	336	9	"	
11159	"	13:16	14:03	7.22	8.48	8.8	2810	5731	730.9	64.4	1972	6905	748	1759	"	"	"	6.36	17.88	1877.18	"	0.7	59	237	7	"	Beams are lost!
11160	"	15:59	16:03	10.38	10.94	10.5	177	495	46.9	4.8	172	481	68	150	"	"	"	9.14	1.62	1878.80	"	0.8	53	23	0	"	Time out in ORATE 4 : run stopped at Run Summary - Only 13 Pedestal events read
11161																											
11162	9.5.82	16:15	16:24	9.82	10.36	11.6	534	1309	138	16.0	481	1449	183	430	ON	ON	ON	8.68	4.63	1883.43	IBM	0.77	58	61	1	17.300	Run stopped because of NORD trouble.
11163	"	16:27	17:24	8.33	8.83	10.7	3389	8002	881	94	2725	9798	1031	2873	"	"	"	8.01	27.14	1910.57	"	-	60	307	11	"	
11164	"	17:24	18:27	8.31	8.81	9.2	3755	8002	977	89	2794	9319	1020	2418	"	"	"	7.19	27.01	1937.58	"	0.72	57	313	14	"	
11165	"	18:27	18:39	7.11	7.57	18.4	401	782	104	19.1	247	965	83	280	"	"	"	6.04	2.42	1940.00	"	0.66	58	29	0	"	Run stopped because 'NO TRIGGERS'
11166	"	18:39	19:19	6.92	7.38	10.4	2323	4628	604	63	1554	5851	584	1526	"	"	"	5.98	13.89	1953.89	"	0.64	58	163	4	"	
11167	"	20:08	20:56	10.18	11.30	15.8	2659	8002	691	109	2805	8464	1050	2576	"	"	"	8.62	22.93	1976.82	"	0.72	60	245	7	"	
11168	"	20:57	21:37	9.75	8.84	17.5	2411	8002	627	109	2782	8339	1059	2478	"	"	"	7.49	18.05	1994.87	"	1.0	61	205	5	"	
11169	"	21:38	22:21	7.77	8.48	12.8	2594	8002	675	86	2706	8528	1038	2430	"	"	"	7.25	18.81	2013.68	"	1.0	60	219	6	"	
11170	"	22:22	22:40	6.81	7.37	16.0	1096	2838	285	45	1035	2952	408	779	"	"	"	6.45	7.07	2020.75	"	0.82	60	105	4	"	Run stopped because 'NO TRIGGERS'
11171	"	22:41	23:09	6.43	6.94	13.6	1644	3977	427	58	1447	4201	553	990	"	"	"	6.13	10.08	2030.83	"	0.70	60	144	1	"	" " " "
11172	"	23:09	23:31	5.93	6.39	9.4	1267	2846	329	31	1034	3066	400	732	"	"	"	5.69	7.21	2038.04	"	0.69	58	80	3	"	
11173	10.5.82	00:13	00:42	10.25	10.91	5.6	1724	1804	448	25.2	637	2163	247	602	"	"	"	3.96	6.84	2044.88	"	.8	57	71	3	"	Run stopped for B4 C4 - to hit new DLS.
11174	"	00:57	01:07	9.07	9.56	8.7	578	1467	150	13.1	480	1398	18	398	"	"	"	7.99	4.62	2049.50	"	.7	41	56	3	"	Stopped because one DLS was dead.
11175	"	1.40	3.06	3.26	3.03	3.1	5131	4492	1335	41.2	1716	5649	524	638	"	"	"	1.67	8.58	2058.08	"	.2	56	120	0	"	beams dumped
11176	"	4:55	5:16	11.43	11.58	11.3	2451	5216	687	71.9	2056	6184	757	1712	"	"	"	9.28	22.74	2080.82	"	.15	259 59	283	10	"	run stopped because 'NO TRIGGERS'
11177	"	5:16	6:16	10.06	10.17	10.2	3585	8002	932	94.8	2958	9527	1082	2572	"	"	"	8.78	31.49	2112.31	"	0.60	59	368	10	"	
11178	"	6:17	7:00	8.47	8.56	10.2	2374	5450	618	63.1	1891	6559	3716719	1915	"	"	"	7.92	18.80	2131.11	"	0.6	59	241	12	"	beams lost
11179	"	10:14	10:54	11.58	10.97	10.7	2340	5762	609	65.4	1932	6808	698	1954	ON	ON	ON	8.85	20.72	2151.83	TAPE F11 145		59	226	2	"	
11180	"	10:54	11:12	9.92	9.69	10.8	1023	2625	266	28.8	835	3022	317	943	"	"	"	8.19	8.38	2160.21	IBM	0.75	58	117	3	"	Run stopped because 'NO TRIGGERS'
11181	"	11:13	11:13	9.39	9.18	13.4	12	37	3	0.4	9	25	6	8	"	"	"	7.46	0.09	2160.30	"		56	3	0	"	"
11183	"	11:16	11:44	9.31	9.10	9.9	1652	3845	430	42.7	1227	4466	447	1205	"	"	"	7.58	12.53	2172.83	"	0.65	58	143	5	"	Beams lost

Run	Date	Start	Stop	at Run Start I_+	at Run Start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 rej $\times 10^6$	T_1 ACC Sum	T2 ACC Sum	T_1 Bit 2 $E_T > 6$ GeV	T_2 Bit 17 $2T \cdot E_T \cdot 2T$	Rejection NSO	Rejection MIP	Rejection TOF	$\langle L \rangle \times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T2 Reject Ev. Fract. (%)	Bhabha	M.H.	E_{beam}	Remarks
11184	10.5.82	18 34	19 06	10.56	10.72	14.6	1897	4876	494	72	1549	5969	580	2023	ON	ON	ON	8.23	2172. 5 15.61	2188.44	IBM	.8	57	186	4	17.300	flash ADC run. DL8 dead.
11185	"	19 16	19 38	9.06	9.23	11.3	1355	2884	352	39,9	1033	3437	387	~~1000~~	"	"	"	7.42	2169.06 2188.44	2198.50	"	.7	59	122	2	"	" (1 or 3 cells 8 ring 2)
11186	"	19 45	19 50	8.33	8.49	10.4	241	560	62	6.5	176	663	64	686	"	"	"	7.08	1.71	2200.21	"	.6	53	31	0	"	Beams lost. Flash ADC run.
11187	"	21 13	21 13					0														.8					Run aborted – DL8 problem. No run start
11188	"	21 31	22 44	9.39	10.99	11.7	4054	9028	1055	120	2985	10911	1084	3093	"	"	"	6.97	28.28	2228.49	"	.8	59	393	15	"	
11189	"	22 44	22 45	7.53	8.93	9.9	28	94	7	1	2666 24	10622 63	6	26	"	"	"	6.15	0.17	2228.66	"	.6	36	2	0	"	union crate missing run restart
11190	"	22 46	23 50	7.52	8.91	12.8	3742	8601	974	125	~~849~~ 849	~~2666~~ 2666	1030	3388	"	"	"	6.48	24.26	2252.92	"	.6	58	307	10	"	
11191	11.5.82	23 51	0 45	6.37	7.61	13.4	3265	7461	850	114	2078	9813	776	3438	"	"	"	5.44	17.75	2270.67	"	.54	57	211	4	"	Beams dumped.
11192	"	1 48	2 48	10.76	10.46	11.1	3575	8013	930	103	2882	8943	1067	2437	"	"	"	8.33	29.79	2299.46	"	.65	57	369	11	"	with FADC.
11193	"	2:49	3:53	9.03	8.81	10.0	3833	8002	997	99	2701	8988	975	2249	"	"	"	7.27	27.88	7323.34 2276.55	"	.53	55	343	9	"	with FADC
11194	"	3:55	5:11	7.66	7.48	8.5	4569	8002	1189	102	3005	9371	1118	2050	"	"	"	6.37	29.09	2356.43	"	.50	59	382	7	"	with FADC
11195	"	5:12	5:20	6.41	6.25	7.5	470	758	122	9	291	869	101	164	"	"	"	6.12	2.88	2359.31	"	.40	60	29	1	"	with FADC. Beams dumped
11196	"	13:58	14:59	10.99	10.07	12.5	3460	8289	902	113	2667	9859	990	3013	on	on	on	7.41	25.63	2384.94	IBM	0.8	59	296	21	17.300	with Flash ADC
11197	"	15:01	16:01	9.33	8.46	16.2	3577	8002	932	151	2466	10243	910	3649	"	"	"	6.64	23.73	2408.67	"	0.6	59	301	10	"	with Flash ADC
11198	"	16:02	17:06	8.04	7.26	13.5	3806	8002	991	134	2444	10147	882	3489	"	"	"	6.02	22.92	2431.59	"	0.5	58	287	7	"	With Flash ADC:
11199	"	17:06	18:01	6.94	6.26	8.9	3261	5724	849	75.9	1909	7037	645	1773	"	"	"	5.53	18.04	2449.63	"	0.4	59	201	6	"	With Flash ADC
11200	"									no	events																
11201	"	18:37	19:33	10.51	10.97	13.7	3331	8002	866	119	2621	9596	999	2873	"	"	"	7.93	26.40	2476.03	"	0.7	58	335	8	"	With Flash ADC
11202	"	19:33	20:37	8.80	9.21	10.7	3776	8002	983	105	2760	9459	1041	2461	"	"	"	7.45	28.13	2504.16	"	0.6	58	334	11	"	with Flash ADC
11203	"	20:37	20:43	7.37	7.70	7.7	299	602	78	6	206	668	84	180	"	"	"	6.87	2.05	2506.21	"	0.4	54	26	1	"	without FADC
11204	"	20:44	22:15	7.25	7.58	13.3	5469	9249	1423	189	3393	10617	1263	2334	"	"	"	5.69	31.12	2537.33	"	0.5	58	406	14	"	with FADC
11205	"	22:53	23:52	11.15	10.70	12.6	3361	8002	874	110	2728	9106	1079	2518	"	"	"	8.56	28.77	2566.10	"	0.7	58	372	10	"	with FADC
11206	11.5.82	23:52	0:55	9.44	9.07	15.2	3730	8002	970	147	2657	9563	1018	2743	"	"	"	7.00	26.10	2592.20	"	0.6	59	340	9	"	with FADC
11207	"	0:56	1:35	7.94	7.66	18.1	1829	4780	471	86	1395	2421	50	829	"	"	"	6.24	11.50	2603.70	"	0.65	59	188	4	"	probably ~ 1000 events written on tape
11208	12.5.82	1:36	2:32	7.16	6.97	10.2	3255	6116	846	86	2061	7144	767	1664	"	"	"	6.20	20.19	2623.89	"	0.65	59	240	10	"	with FADC
11209	"	3:06	4:07	9.33	8.99	11.5	3814	8067	940	109	2957	9218	1125	2435	"	"	"	8.63	31.21	2655.10	"	0.65	58	387	14	"	
11210	"	4:08	5:14	9.19	8.85	10.7	3978	8343	1023	110	2930	9259	1149	2467	"	"	"	7.62	27.44	2684.08	"	0.5	57	389	10	"	with FADC
11211	"	5:19	6:29	7.81	6.46	9.4	4279	7513	1113	93	2945	7902	1123	1885	"	"	"	6.97	29.67	2713.75	"	0.5	57	345	7	"	with FADC ~ 1000 events written on tape
11212	12.5.82	8 42	9:46	11.1	10.5	11.1	175	434	45	5	136	459	54	136	"	"	"	6.98	1.22	2714.97	"	0.65	52	15	0	"	beams lost / with FADC
11213	"	9 36	10 35	11.3	10.7	11.8	3554	8002	925	108	2729	9235	1036	2459	"	"	"	7.65	27.2	2742.17	"	0,65	58	337	8	"	with FADC
11214	"	10 38	11 44	9.5	9.0	13.2	3850	8002	1002	132	2692	9378	995	2410	"	"	"	6.30	26.5	2768.67	"	0,55	58	334	6	"	IBM after busy with FADC
11215	"	11 47	12:58	8.03	7.56	9.3	4241	8002	1103	102	2809	9279	1081	2097	"	"	"	6.38	27.08	2795.75	"	0,45	58	340	10	"	with FADC
11216	"	12:59	13:20	6.82	6.39	8.2	1177	2104	306	25	771	2280	298	467	"	"	"	6.01	7.08	2802.83	"	0,35	56	91	4	"	beams dumped with FADC
11217	12.582	14:49		11.53	10.58	13.3	1139	2223	286	57	728	2660	255	815	"	"	"	6.03	6.9	2809.73	"	0,65	58	68	3	"	with FADC

Run	Date	Start	Stop	I_+ at Run start	I_- at Run start	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 reg $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 $E_\gamma > 6$ GeV	T_2 Bit 17 $2T \cdot E_\gamma \cdot 2\tau$	Rejection NSD	Rejection MIP	Rejection TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T2 Rej Ev. Fr (%)	Bhab.	MH	E_{beam}	Remarks

8/5/82

19:18 ID trip
19:20 since 19h first stored beam in DORIS 2 !
21:37 Beams dumped
22:36 New Fill . HV on
23:17 Beams lost . several spark alarms in R1 of C.D
Short break

9.5.1982

0:00 Allison, Wiedt
0:23 "short break" is turned into: "break", restart 3 am". We run down the magnet to 500 A.
3:00 "3 am" is changed to "5 am".
3:37 We learn that the trouble is a water leak in the kicker magnet. It is being inspected. Possibly it may have to be changed.
3:38 Kicker magnet repaired & being replaced.
4:56 PETRA - magnets are switched on again. We raise magnet current to 7500 A.
6:00 Finally we get a fill, start run 11152
Several time-outs. Branch 4, crate 4 : stopped the run.
Tried "C" & "Z" — to no avail (see p 165).
6:30 We phoned Bethke to get his advice: we will continue running without channels 552-559 till he comes in.
6:39 Run 11153 hung after about 1000 events. (It was an I.D. trip — a quiet one!)
6:55 YSPY complains about missing V34 for DL8 #71 (the disconnected one is #69) — we can't check because we cannot look at the histograms: we only get the well-known message "too quick ! display busy !...".
Reprogramming problem cured by reloading NORD

8:00-16:00 Bethke & Yamada

DL8 69 changed, again Time outs! So cleaned all contacts (with rubber gum) → no time outs, but DL8's from #70 on not read out (hole in wire map). Cleaned contacts of #70 → now no read out from #71 on !! (I'm glad, that 1 crate contains only 7 DL8). I'm going on.
8:25 All DL8 work. Start run 11156 after putting in the old DL8 #69 (to have the calibration constants not changed). All things are o.k. .
8:40 Muon crate 8 missing, can't reset from here. (Also YSPY, Muon digit.). Reset crate 8 directly (downstairs). OK.
11:00 New filling ready
12:55 I.D. trip B.P. current 0.7 V
15:55 New filling's ready
The beam condition is very bad → PKR tries an improvement.

16:00 Haidt + Glawdinning on Shift.
16:10 Yamada ~~reseted~~ 'pulled' the wires a bit on DL8's and got rid of timeout problem.
16:18 I tried to log on to the NORD10, pressed ESC and got a message "ERROR 00 AT 123222; ILL. MONITOR CALL" which just repeated itself without any way of stopping it. I then tried the other tektronix unit, the (LUN 34), with the same result. The TV display looks OK, and events are still counting up, but this seems serious to me so I'll reboot the NORD.
16:26 Run 11163 started OK after NORD reload. TTY's respond correctly to ESC now.
16:49 JDAS error. Timeout branch 2 crate 3, once only, resumes OK.
18:25 " Timeout branch 4 crate 4
18:27 " " " 7 " 3 (New Run 11165)
18:35 I.D. Trip, no apparent reason.
18:37 'No Triggers' - stopped run + started again - OK.
18:59 JDAS error Timeout branch 3 crate 2 - Muon Chambers
then 'No Triggers', so paused the run → Jdas error 45 sub error 1 (Hproc did not finish analysis)
Pulled the wires around on the CAMAC crate, un-paused and OK.
19:11 Timeout branch 7 crate 3.
19:18 Timeout " 4 " 4 three times in quick succession, then OK.
20:10 " " 7 " 3
20:17 Timeout " 4 " 4 Six times, then OK again. Then 30 seconds later even more of them, but went away after pausing the run a couple of times.
20:31 Jetchamber high Current, finally just 93 - ID tripped
22:43 'No Triggers' pausing + un-pausing doesn't work so stop run, new run OK.
23:10 'No Triggers' again! don't know what causes this, but had to start another new run.

10.5.82

00:00 Cords. Duerdoth.
00:13 New Fill + start run 11173. We keep getting JDAS ERROR TIMEOUT BR C4.
Fortunately its getting more and more frequent. Its the 1st DL8 in the crate. Expert comes to change it.
00:57 Start new run 11174 After 10 min YSPY detects hole in I.D. wire map. - well done. So stop & fix DL8 again.
01:10 Most of beam lost - so have to dump & fill again — but PKR have other problems so we have to take data with 3 mA beams
01:40 Start Run 11175 - 3 mA on 3 mA. Heinzelmann changed DL8 (1st one in 34 CY) once again and there are no more holes in the wire map. The wire map looks a little bumpy but that may be due to the low beam current.
There is a water leak at PIA, therefore injection will not be possible for at least one hour.
3:02 beams dumped
4:30 finally new filling
run 11176: timeout branch 7 crate 5
6:50 ID trip - without buzzer

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 reg $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 $E_\gamma > 6$ GeV	T_2 Bit 17 $2T \cdot E_\gamma \cdot 2\pi$	Rejection NSD	Rejection MIP	Rejection TDF	$\langle L \rangle \times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T2 Rej. Ev. π (%)	Bhab.	MH	E_{beam}	Remarks

10/5/82

8^{00} Bartel, Kobayashi

8:30 problems with water leak in Petra, experts went into the ring tunnel
9:50 Injecting into PETRA but now IBM-link is down
10:15 IBM still down, link to TAPE run 11179 TAPE F11-145
10:55 YSPY-error 4 μ-digitizers missing
The histograms don't show major holes, which have not been there before
11:15 'NO TRIGGER ...' occurs often. During the patrol run of Run 11182 'IBM BUSY' appeared and the program was terminated.
11:44 Beams lost. ID tripped.
12.00 "Short Break." Magnet run down to 500 A for ½ "Save a watt"
12.34 Phoned to PKR; They say PETRA will continue about 13^{00}
13:30 Message from the coordinating experiment TASSO:
A new water leak developped in PETRA. The machine will be down for at least one more hour.
15:40 Switch on magnet
PETRA is injecting
16:00 I would not call this a successful shift.
" J. Allison and S. Komamiya on shift.
18^{14} Beam! Beam pipe current high — fluctuating. PKR adjusting. It's taking a long time. This is unusual.
18^{32} Beam stable.
18^{55} Start run 11184. 4) YSPY LUN OCCUPIED. Cleared.
JDAS error - timeout branch 4 crate 4.
19:10 JDAS error - timeout br. 4 cr. 4 (again) comes every second.
19:15 Started 11185.
19:05 "No Triggers" with white LAMP on. Run stopped and a new one started.
19:25 YSPY detected DL8 #54 & $\bar{V}$34 #49, 51 & 53 dead. Komamiya investigating.
19^{30} YSPY: Mu digitizer missing: #41. ← May be statistical fluctuation. Watch for a repeat.
19^{37} 11185 stopped to change DL8.
19^{45} DL8 replaced. Run 11186 started.
19^{53} Beams lost. What a luminosity run !!!! ID gave "High Current, faulty part 96" but did not trip
21^{12} Beam again. Run started 11187.
JDAS error timeout branch 4 crate 4 - AGAIN! Pause & start doesn't help. DL8 being changed.
21:30 Run 11188 started. (DL8 changed).
21:52 MU digitizer missing: #20. ← May be statistical fluctuation. Watch for repeat.

21^{40} Where the hell is the thermometer which was hanging in the electronics part of the counting house? But temperature at the DL8's seems to be o.k. RDH
21^{54} ID trip. No alarm. (no alarm indication in Rücksack.) No Umlaut in Rucksack!
seemed to be beam fluctuation found by B, P, C.
22^{40} Standard Histograms OK.
Run does not stop automatically at 8002 events
22:42 magnet fluctuation
23:03 YSPY detected muon digitizer missing #41.
23:30 JDAS error timeout — branch = 7 crate = 3 DL8 (Ring?) → checked histogram o.k.
23:35 Magnet fluctuation " 3 " 2 Muon
DVM = .7490
23:45 YSPY detected muon digitiser missing #20

11/5/82

0:00 Bartel, Kamizaki
0:45 check histograms during run 11181 all ok.
one dead wire on ring 3 (#101)
0:45 Beams dumped.
0:50 Magnet fluctuation. → check DVM. O.K.
1:45 New filling ready. Take
BP counter #16 was very noisy. the cable out.
1:48 Start run 11192.
2:41 Time out. Br. 7 Cr 3
2:59 DL8 49 giving no response however conversion lamps flicker.
Touching and twisting the cables helps. It is counting again.
We do not call Meyer although I know he would be eager to come in.
5:20 Beams dumped.
7:00 'Endschluß' bei DESY
7:15 Magnet number 6 3000 A
8^{00} Desy off till 13^{00} Magnet run down to 500A
Barton, Helmstrand ausgeh.
Call from Felst: PETRA shutdown Thursday 13.5 and Friday 14.5 7 - 17 h each
for works on PETRA. One guardian should be present at the experiment.
Shift crews can agree on splitting.
13:10 raise magnet to 7500 A on request of PKR

Run	Date	Start	Stop	at Run Start I_+	at Run Start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 reg $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 $E_\gamma > 6$ GeV	T_2 Bit 17 $2T \cdot E_4 \cdot 2\tau$	Rejection NSD	Rejection MIP	Rejection TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T2 Rej. Ev. Fr (%)	Bhab.	MH	E_{beam}	Remarks

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11.5.82

13[59] Start run. 11196
13[58] ID Trip
16[00] Minuera & Warning on shift
16[10] timeout branch 2, crate 3
16[05] high dead time (40%), high beam pipe rate (0.8V), we phone to PKR and complain, they do a slight change and things are back to normal (10% dead time, 0.45V bpipe)

17[40] Tasso request a new fill at 18:00.
19.00 Tentative Installation of a TDC for the first Clock Pulse. First Empty Test TDC.
Start same as FWMu TDC. ~~Range 2t~~ Slope 250 psec/channel (Non-Standard)

Location in Data Structure Here

TEST ADCS	BANK	32767	6	0	0	0	0	0		2	0								
50	44	50	53	43	59	42	38	39	48		49	0	2059	2059	2059	2059	2059	2059	2059
2059	0	867	2305	2305	2305	2305	2305	2305	2305		0								

Played during Run 11201
Hopefully valid from Run 11202 on. Temporarily allocated to YHMON Histogram 1
Detector Part Code 6, Part Number 70, Low Edge: 800, Bins: 100, Bin Width: 1,
See N10 - Monitoring Subcontext for Use.
Channel 1 of TDC possibly unstable. (Input (clock) now to 2nd Input of 2nd Test TDC)

20:24 timeout branch 2, crate 3
21:30 "no triggers", we try ~~to reset~~ to follow Kirchbichl's advice and end up with pushing the red, green and white buttons at the trigger box; after some time, the system starts to work again.
timeout branch 2 crate 5 (You did not! Note status of LAMPS and LEDs)
22:00 at 22.15 Tasso request a new fill.

0[00] - 8[00] Morelli, Palmer
0[00] no triggers. The yellow T1 overflow was on and none of the big lamps
we tried with pushing the red, white, green button. It worked!
0[50] Timeout branch 2 crate 5
0[56] ID ~~Alarm~~ but the data taking didn't stop!
high voltage off due to the high anode current (fast recognition). This case gives no alarm,
1[33] Timeout branch 2 crate 5

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2[05] ID trip

5[30] again ID voltage off due to the high anode current but no alarm. } One should not wonder that
the data taking didn't stop !!! } of the data taking does
7[00] - 7[40] PKR has problems with the power supplies at Petra not stop when the stop
cable is not connected
to the trigger box

8[00] Hellen Brand, Felst
14[55] "NO TRIGGERS" pushing green button and pulling Stop cable cures the problem
TIMEOUT branch 2 crate 5

4[00] pm Barlow, Komamiya.
4[10] ID Trip. Spark + Anode Current + H.V. Output
End of fill.
18[30] New fill
19[00] Triggers stop. Trig Sig. Att. flicker Tj Position - steadily on
LSD status ID Accept on Tj region steadily on.
Triggers dug deeper flicker
Trigger Source ext CAMAC on
Action override on
When it happened: white "Event accepted" light was on.
After pressing it - green light came on.
Pause - Continue fails.
Stop run & restart - all OK.

19[30] TASSO phone. They say they observed a problem with the HSM link around 19[00] - they it was unavailable to them for 05[10] of the time. Could this be connected with our NORD (Sigi) hangup? Pity we didn't note the state of the PADAC.

21[30] Triggers stop - same symptoms as before. Stop run + restart. In the PADAC CCI omit the SEL and CON lights blinked once per sec.
23[10] New fill

13 May 1982

0[00] D. Darvill + H. Rieseberg
0[14] run 11225 ended - 11226 started immediately
0[37] (Glentinning) I was using LUN 35 when the error "ERROR 00 AT 123222; ILL. MONITOR CALL" occurred, repeatedly scrolling. No response to ESC. This also happened to me on the 9th May.

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec 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 $2T \cdot E_1 \cdot 2T_2$	Rejection NSO	Rejection MIP	Rejection TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T2 Rej Ev Fr (%)	Bhabh.	M.H.	E_{beam}	Remarks
180				AT RUN	START	DEAD TIME	TIME	REC. 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 $2T \cdot E_1 \cdot 2T_2$													181
11218	25.8.82	15.12	16.02	10.87	10.00	10.1	2991	6935	778	79	2423	8226	928	2331	ON	ON	ON	8.41	25.16	2834.89	IBM	?	58	306	9	17.300	without FADC
11219	"	16.06	16.10	9.45	8.66	10.4	248	607	64	6.8	187	720	67	225	ON	ON	ON	7.40	1.83	2836.71	"	?	57	19	1	"	" beam dumped
11220	"	18.27	19.09	11.32	10.97	31.5	1814	3374	472	149	1274	3844	477	1187	ON	ON	ON	7.70	13.96	2850.67	"	0.8	59	177	4	"	no trigger → stop the run
11221	"	19.10	20.07	8.73	8.47	10.6	3386	5002	881	931	2780	9495	1038	2819	ON	ON	ON	8.59	29.07	2879.74	"	0.6	59	369	10	"	
11222	"	20.08	21.12	8.71	8.45	8.8	3868	8002	1006	89	2876	9351	1100	2534	ON	ON	ON	7.37	28.52	2908.26	"	0.5	58	388	14	"	
11223	"	21.13	21.27	7.44	7.21	7.5	828	1520	96	16	585	1760	200	2003	ON	ON	ON	6.42	5.31	2913.57	"	0.4	56	64	4	"	No Trigger
11224	"	21.31	22.29	7.13	6.91	8.1	3483	5974	807	64	2272	7008	839	1591	ON	ON	ON	6.18	29.53	2934.10	"	0.4	58	278	7	"	beam dumped.
11225	12-13.8.82	23.16	00.15	11.14	10.98	10.0	3494	8002	908.8	90.6	2894	9247	1116	2560	ON	ON	ON	8.66	30.24	2964.34	"	0.6	58	381	14	"	
11226	13.-5.82	00.15	00.50	9.62	9.28	11.8	2064	4278	537.1	90.1	1447	5167	546	1380	ON	ON	ON	7.30	15.07	2979.41		0.55	59	177	4		
11227	"	00.55	02.04	8.43	8.29	8.3	4173	8002	1086	90.3	2840	9661	1089	2363	ON	ON	ON	6.47	26.98	3006.39		0.5	60	358	19	"	
11228	"	02.05	02.44	7.14	6.93	10.2	2107	3466	548.1	56.1	1250	4115	459	883	ON	ON	ON	5.57	11.73	3018.12		0.35	58	138	3	"	Beam dumped
11229	"	3.37	04.10	11.22	10.76	10.0	1776	3977	462	46.3	1416	4774	536	1369	ON	ON	ON	8.36	14.84	3032.96		0.30*)	59	171	8	"	*) W. Rout compensation battery
11230	"	4.16	5.23	10.04	9.59	8.9	4009	8002	1043	93.2	2942	9591	1154	2574	ON	ON	ON	7.53	30.19	3063.15		0.25	59	327	17	"	
11231	"	5.23	6.38	8.39	7.97	7.5	4461	7822	1161	87.3	2952	9265	1062	2236	ON	ON	ON	6.22	27.73	3090.88		0.1	58	357	11	"	Beam dumped
11237	14.5.82	22.13	22.17	9.38	7.21	9.3	195	590	50	47	115	422	53	103	ON	ON	ON	5.52	1.08	3091.96		0.6	0%	19	1	"	
11238	"	22.20	23.45	7.96	5.99	6.5	5101	8002	1327	86.2	2997	9757	992	2291	ON	ON	ON	5.09	25.95	3117.91		0.5	57%	300	13	"	
11239	"	23.46	23.53	7.85	5.89	6.0	426	616	111	6.7	217	803	88	175	ON	ON	ON	4.62	1.97	3119.88		0.5	58%	30	0	"	Beams dumped
11240	15.5.82	0.48	1.55	9.41	8.32	9.0	3943	8002	1025	91.9	2931	8681	1055	2722	ON	ON	ON	6.68	26.36	3146.24	"	0.75	58	332	8	"	
11241	"	1.56	2.55	~8.	~7.			~5500							ON	ON	ON		~15.	3161.24	"	0.58				"	WORD restarted
11242	"	3.05	4.02	8.12	7.12	19.5	3395	4408	882	172	1712	5186	598	1049	ON	ON	ON	4.25	14.42	3175.66	"	0.60	57	199	9	"	beams dumped
11243	"	4.52	6.02	10.31	9.6	8.1	4168	8002	1684	87.7	3041	9387	1179 1052	2314	ON	ON	ON	7.29	30.41	3206.07	"	0.72	58	398	10	"	
11244	"	6.02	7.19	8.76	8.62	7.1	4681	8002	1197	84.9	2997	9320	1080	2045	ON	ON	ON	6.88	29.34	3235.41	"	0.65	57	350	13	"	
11245	"	7.20	8.01	7.34	6.76	6.9	2165	3650	564	38.8	1307	4460	441	976	ON	ON	ON	5.69	12.33	3247.74	"	0.60	57	161	5	"	beams dumped
11246	15.5.82	8.50	9.04	10.09	9.17	8.0	752	1507	196	15,7	~~72~~ 550	7679	792	426	"	"	"	6.96	5.24	3252.98	IBM	0.75	56	65	4	17.300	Beams lost. DOWN. started with F7 no EADC
11247	16.5.82	stopped ~~6.05~~ (only 2 events) due to AC2099 no response.																									
11248	"	00.53	01.38	9.79	10.04	13.5	2524	5227	656	88.8	1704	5308	688	1465	ON	ON	ON	4.12	10.39	3263.37	IBM	0.75	43	255	11	17.300	stopped to allow work on DL8'.
11249	"	01.45	03.05	~~845~~ 889	~~889~~ 845	8.1	4797	8002	1248	101	3081	9669	1216	2419	ON	ON	ON	3.89	18.65	3282.02	"	0.65	58	396	11	"	
11250	"	03.05	04.02	7.19	7.40	6.5	3283	4901	853	55.6	1856	5717	759	1747	"	"	"	3.23	10.61	3292.63	"	0.6	55	259	6	"	beams dumped.
11251	"	04.38	04.59	10.31	10.51	11.0		263							"	"	"	1.64	2.19	3294.82	"	.9				"	number read from screen (Word-processor)
11253	"	5.29	6.44	9.50	9.15	7.5	4463	8002	1159	87.4	2895	~~9607~~ 9669	1209	2307	"	"	"	3.98	17.74	3312.56	"	.8	57	424	6	"	
11254	"	07.13	07.32	7.4	7.1	6.1	1011	1549	263	160	550	~~1864~~ 1864	195	386	"	"	"	3.36	3.40	3315.96	"	.7	56	62	2	"	beams dumped.
11255 ~~19~~ 17	missing : only 2 pedestal counts per run																					0.9					part of tagging system missing
11258	"	8.23	9.29	9.80	9.25	8.6	3943	8002	1026	88.7	2581	9953	1090	2655	ON	ON	OFF	3.55	14.01	3229.97	IBM	0.9	60	338	8	17.300	
11259	"	9.30	10.11	8.39	7.89	8.7	2455	5192	639	55.7	1617	6281	639	1632	ON	ON	OFF	4.57	11.23	3241.20	"	1.0!	59	195	5	17.300	tagging re-installed during run
																				3303.0	← Corrected for error in tagging system						

Runs 11247 – 11259

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 reg $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 $E_\gamma > 6$ GeV	T_2 Bit 17 $2T \cdot E_\gamma \cdot 2\pi$	Rejection NSD	Rejection MIP	Rejection TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T2 Rej. Ev. Ft (%)	Bhab.	MH	E_{beam}	Remarks

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0^{36} No triggers — Krehbiel trigger box: Big green lamp RUN on center
Trigger signal arriving : flickers
T_0 accept resp. deadtime of fast master FF: on steadily
Trigger during deadtime : flickers
Action: No Run – Reset Event – Start Run → 02

0^{50} Reload Nord for Mr. Glendinning (see page 179, bottom)
02:30 Inner detector run-down
02:34 Trigger box hang-up – conditions as above; T1 postpone lamp on continuously – this was not noted before because we didn't remember the condition before resetting.

2:44 Stop Run 11228 for refill

Power supply of DL8s # 131–137 breaks; replaced

Question: stored N50 Histograms: There are the Runs 11158–11176 and 11227, 11228 (last).
Why the Runs 11177–11226 are lost? The last 20 runs are kept and they are all there. D.C.

3.35 New fill ready, start Run 11229
3:42 ID Trip
4:10 Run 11229 stopped to change faulty DL8 unit # 48 (wires 384–391). Artificial second hit.
4:15 Run 11230 started. Shortly after starting the console writer produced the following message:
"ERROR IN OPENING FILE FOR READ0005H 1"
I fail to find any trace of this error in the JDAS book, but the ϕ data seems to be coming in quite normally

6^{40} Stop Run 11231
Beam dumps for repair of water leak in PETRA tunnel (see page 177)
Magnet → 500A

8^{00} Ball and Takeda on shift
We have a "long" break at PETRA today. "Reparatur Wasserleck".
We split a shift < 8^{00} – 12^{00} Takeda
12^{00} – 16^{00} Ball
15:57 1st action this shift: PETRA message changes to "Tunnelsuche gestartet!"

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16^{00} Krehbiel & Marshall on shift

17^{20} Message changes to "Kurze unterbrechung".
19^{00} TV says "DESY Magnetstrom ausgefallen";
19^{27} I called to PKR. They cannot give any time estimate. Synchrotron people are looking for the fault.
20^{30} Called PKR – no information. (next "no information" in one hour)
22^{80} Message changes to "Switch on magnets" we switch on
22^{25} Injection begins

0:00 Glendining and Odaka 14-MAY-'82

0:18 Magnet on 7500A
Message on TV changes to "INJECTION".
4:06 Telephone from PKR.: They have a big problem in injection.
Magnet was powered down to 500A.
4:09 Message changed to "Unterbrechung // Break". Restart 17:00?
– we decide to split remainder of shift – Me first (IG)

08:00 Ball & Yamada
1st 4 hours 2nd 4 hours.

15^{10} "Achtung PETRA wird eingeschaltet." → LG HV was switched off by putting the remote ON/OFF cables back.

16^{00} Marshall & Steffen on shift

16^{02} Message says "injection"
16^{03} "Kurze unterbrechung"!
20^{05} Finally get a fill, low current – lost immediately before ID switch on
21^{20} New fill try again
21^{24} Run 11232 starts at last and stops – CAMAC trouble
22^{20} Finally get going on 11238

There was a crate switched off CRATE 2 BRANCH 2.
This was done before 08^{00} on 14/5/82 Any Confessors ?

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 rej $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 $E_{ch} > 6$ GeV	T_2 Bit 17 $2T \cdot E_4 \cdot 2\tau$	Rejection NSO, MIP, TOF	$\langle L \rangle$ $\times 10^{30}$	$\int$ Ldt Run	$\int$ Ldt Exp	IBM TAPE	BP [V]	T2 Rej. Ev. Fr (%)	Bhab.	MH	E_{beam}	Remarks

15.5.82 0:20 Matsumura, Elsen on shift

0:49 start run 11240

1:24 Tuncont branch 2 crate 2

1:57 HV Read Error in LG-initialisation Printout says, checks is skipped. (called Kanzaki)

2.15 Tuncont branch 2 crate 3

2.17 I.D. run down because of overcurrent. Data taking stops.

2.25 SP current rather unstable. Call PKR.

2.55 L-P reports disc/drum transfer error. Ignore.

2.45 Get several other transfer error printouts. The COMMAND terminal is blocked and cannot be reset following the procedure indicated; data taking continues. We reload NORD. start run 11242

3.15 Trigger box hangup: "Accepted event" off; trg rd lamp off; yellow LED on, red LED off. => T_0 and T_0 reject are counting.
Try anything! The final cure is the sequence RESET EVENT, STOP, RESET RUN, RUN.

7:3. Had 3 "magnet current fluctuates" during the last three hours.

15.5.82 8.00 Krehbiel here. Where is Elendinwig? . New Petra filling

8.45 Called A.Ball to search for Gl. or find a temporary substitute.

8.48 Untergrund Optim. 8.50 Run start.

9.05 ID trip. All Beams lost. "Down"

9.35 "Short Break", Glendinning here - sorry folks.

10.00 "Restart 11.00"

13:30 A horn goes off in the hall - it is because the temperature in the control room is too hot (24-26°C)
Telefone calls to Felst and Schult. The compressor 2 below our feet was on "störung". I pressed the notorious button at the comp. 2 ☆ safety pressure sensor (or whatever it is). Compressor started working. Hopefully the temperature goes now down. I could not find a meter for cooling water pressure.

Shift crews should have a look at the compressor panel through the ☆ windows below our outside stair.

Compressor continued to switch itself off 20 sec after switch-on.
Turning the filter did not help. Felst came in. Mr. H. Schult is on the way here.
We switched off all CAMAC Crates and NIM Crates except DLB and System Crate and Nord-related. Temperature in DISKOTHEQUE 23 deg. Coords was called. He gave hints how to switch them off properly when the TEMP. rises above 25 deg. Hinneberg strongly objects switching off the DLB. Says after turning on again we might have 10 broken ones and Matrix is on holiday.
☆5 7445 Mr. Schult came and with little, ☆but qualified action the compressor went on and stayed on. We switched on again all CAMAC and NIM crates. Impossible to switch on the Tagging Crate. Overload Message. Brute action: Pull out the visual branch terminator. Switch on. (stays on)
JAM in the UBT quickly. Hopefully no damage.

Wrigdt was not at home.

16:00 Heinzelmann & Kanzaki . Not much beam during previous shift. I'm afraid I can't do much to clear the "No Trigger" fault. It means taking the box out.
23:00 Magnet current to 7500A.

16th MAY 1982
00:00 Ball & Steffen on shift. injection in progress after long break.
00:49 Start run 11247 — get YPARA.12 TOF2 AC2099 no response.
do A99-init-load + try test run. Looks ok now. Run number 11247 lost.
00:53 Start run 11248
01:05 ID slow-ons
01:13 Look at histos. Notice 2 holes in ID wire map. one at wires 320→328, another at 736→742
After prodding DL8's 40 & 41 - hole still there. phone Riesberg. must be DL8 (40 or 41)?
Riesberg coming.
01:22 Trigger box hang-up. Can be classified as 'status 3' according to Krehbiel's note. The suggested remedy works fine. DL8 #40 (wires 320-327) and DL8 #92 (wire 736-743) contacts cleaned. R
01:35 Riesberg here - just in time for a succession of branch 7 crate 3 timouts. is from DL8 # 112
01:38 Stop run 11248 to allow work on DL8's. Rej event %-age for this run was only 43%. Not understood.
01:45 Start run 11249.
03:05 End of run 11249. Start run 11250.
03:14 ID slow-ons.
Histograms for 11249: Distortion in section 11 of JETC TIMING MAP R1&2. Also slightly high anode current, in bin 27, tagging LG - noisy channel 39? - tagging patterns histogram 1st, 3rd peaks low, 2nd, 4th high

03:22 TASSO suggest news fill at 04:00 We agree.
04:02 stop run 11250 & dump beam.
04:38 start run 11251 We get frequently 'JDAS ERROR-TIMEOUT branch 7 crate 3'. We reset at the crate but it seems to be OK.
11:57 Transfer error on the NORD. Main terminal is blocked after trying for F12 (NSO-Hiteyama)
data taking continued Message was error 21; disc/drum transfer error disc address 6330 status 44030
20 2622
hardware dev 1540 unit 0.

Can't log in at any terminals. Note details of run from col. TV then reload NORD-10.
On trying to start news run get. error 24 in 34611 (YPARA) at 56171 Prev. Instr.
Phone Coords, who gives instructions on rebuilding YPARA.
5:29 Start again data taking. everything seems to work.

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 reg $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 12 $E_\gamma > 6$ GeV	T_2 Bit 17 $2T \cdot E_\gamma \cdot 2\pi$	Rejection NSD, MIP, TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T2 Rej Ev Fr (%)	Phab.	MH	E_{beam}	Remarks

Error in TAG H.V. Mainframe 63 seems to be off. Check it: no 'EHT on' light. Follow 'emergency procedure' in JDAS manual. Now OK.

$6^{\underline{50}}$ TASSO requests new fill at 7^{50}

07:32 Stop run 11254 to dump beams.

8:00 D. Darvill and H. Rieseberg

8.05 New fill ready

At Start of R 11255 ERROR YPARA 12: TOF 2 AC 2099 No Response

try R 11256 " " 13: TOF 2 AC 2099 VRONG Response 000144

A99 Initial load : no cure

then also MIP Initial load : no cure

We switch off the AC 2099 and start Run 11258

8:17 I> trip

09:00 JDAS ERRIR - TIMKOUT branch 2 entr 5

Note on Luminosity: Runs 11218 - 11224 (12 May 1982) $\frac{\int L dt}{\text{Bhabha}} = \frac{124.37}{1601} = 0.0777$

Runs 11247 - 11258 (part) (today, 16 May) $\frac{\int L dt}{\text{Bhabha}} = \frac{72.04}{1665} = 0.0433$

→ The luminosity (counting rate) is down by a factor 1.80 with regard to the runs before the PETRA break

Tasso has the correct luminosity

From PKR:

	Lumi (1½ min measurement)
Tasso	6.8
Mark J	7.4
JADE	3.6 (already corrected)

09:55 we believe there be a serious problem in some part of the tagging system and look more closely at the tagging histograms. — There is a whole block of 15 channels missing — we check high voltages and power packs on logic and eventually find a ~~cable~~ multiway cable into the ADCs is partially disconnected.
— Retighten the jack screws and look at the histograms again — at last the LG hit map shows hits again in the missing section, and the luminosity as displayed on colour monitor begins to improve!

10^{11} Start Run # 11260 with full tagging system

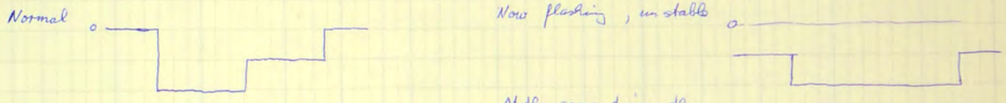
10^{12} Temperature in counting house was rising: 18°C on the Heidelberg Thermometer
Compressor 1 is on Störung. I open in the cooling water circuit the manual shunt valve to the ~~magnetic~~ hydraulic valve, as it is already done for compressor 2.

~~11 10 ID run down because of BP high rate~~

11:12 IBM Transfer Error (OCT) 000054 Sul ewr (oct): 140000 Err. cnt (oct): 000002
pressed 'return' & retry - attached successfully.

11:14 ID run down because of BP high rate.

11:20 Problems with signal on beam scope, lower trace



At the same time the yellow light goes on together with the green light on the beam indicator.

Phone to Mr. H. Krehbiel. He gives instructions, how to investigate.
Result: Upper TR 204A is failing, gives DC out occassionally.
Upper Trigger is not essential for running, and Mr. Krehbiel is coming at 4h.
So no action.

To keep us busy on sunday morning:
There were several times buzzer noises in the electronics house, like from a power pack. Not yet localized.

11 33 Stop run 11261 for refill

12 00 Again failure of Cooling Compressor 1. I open the valve completely (see above)
One compressor is not enough at this warm weather.

Contact cleaning of faulty DL 8's # 22, 163, 112

12 10 During injections: Beez. Sander NL

Run	Date	Start	Stop	at Run Start I_+	at Run Start I_-	DT (%)	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 $2T \cdot E_4 \cdot 2\tau$
11260	16.5.82	10.11	11.24	7.53	7.06	10.1	3829	8002	997	101	2482	9613	941	2472
11261	--	11.25	11.33	6.25	5.86	10.0	453	977	118	11.8	270	1165	89	308
11262	17.5.82	17:39	18:01	9.49	8.76	8.2	1079	2139	280	23	985	2440	298	609
11263	"	18:04	18:28	8.30	8.22	7.5	1285	2317	334	24	878	2769	328	690
11264	17/5/82	22.54	23.16	9.10	9.99	3.2	1248	1034	324	10.5	Lead Glass trigger power supply OFF			
11265	"	23.43	1:13	8.28	9.12	10.6	2785	4552	724	76.9	1737	5300	626	1175
11266	18/5/82	1:14	1:15	6.68	7.43	(0.0)	(0)	31	(0)	(0)	12	0	7	5
11267	"	not exist												
11268	"	1:21	2:55	6.57	7.31	5.9	5281	8002	1374	80.5	3197	9409	1194	1887
11269	"	2:55	3:14	5.29	5.97	5.7	939	1427	244	13.8	589	1605	224	323

~~Rejection~~ NSO	MIP	TOF	$\langle L \rangle \times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp 3303.00	IBM TAPE	BP [V]	T2 Rej. Ev. Fraction (%)	Bhab.	MH	E_{beam}	Remarks
ON	ON	OFF	5.63	21.54	3324.54	IBM	1.1	61	268	9	17.300	
ON	ON	OFF	5.57	2.52	3327.06	--	1.1	62	26	0	--	beam dumped.
ON	ON	ON	6.74	7.27	3334.33	IBM	.90	56	96	3	17.300	
ON	ON	ON	6.44	8.27	3342.60	"	.80	59	110	2	"	beam lost
SCRAP							0.90					
ON	ON	ON	6.01	16.74	3359.34	IBM	0.8	57	188	2	17.300	
"	"	"	(0.0)	0.0	.....	"	?	(0)	0	1	"	
ON	ON	ON	5.80	30.63	3389.97	IBM	0.65	57	396	12	17.300	
"	"	"	5.20	4.88	3394.85	"	0.55	57	67	0	"	beam dumped

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 reg $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 $E_\gamma > 6$ GeV	T_2 Bit 17 $2T \cdot E_\gamma \cdot 2\tau$	Rejection NSD	Rejection MIP	Rejection TOF	$\langle L \rangle$ $\times 10^{30}$	$\int$ Ldt Run	$\int$ Ldt Exp	IBM TAPE	BP [V]	T2 Rej Ev. Fr (%)	Bhab.	MH	E_{beam}	Remarks

13:50 Temperature alarm goes off! It is now 25°C in the hardware room! Both compressors off. Restarted, and the temperature comes down quickly to 20°C but the compressor trip again. we call for help since they both refuse to stay on. the temperature continues to increase - up to 27° - before the technicians get things going — Wrong again - more troubles

14:50 The temperature is now about 28°C and there is a major compressor problem - we switch off what we can of the electronics in order to try to keep the temperature at a low enough level to protect the things we are reluctant to switch off. we switched off the following - all DL8 crate, all tagging system logic,

Kontrolltechniker say that waterpump is broken. We phone Mr. Schult. He has no replacement, but he will nevertheless come to have a look.

15:10 We inform Mr. Feist. He strongly suggests to switch off the computer and the disks. (Mr. Cords is not at home) Indeed the temperature in the box of the disks is already 28.5 °C!

PKR still worring on the emitter switching-off-problem

15:45 Mr. Schult here. 1) Water pump is blocked mechanically, but system should work without it.
2) Heatexchanger: Very little heat is transmitted to the water. There is something wrong.

We agree that we stop our experiment for this night and that repair starts early on monday morning. Mr. Schult leaves with both compressors on.

17.00 Because cooling system behaves well, all electronics is turned on again.
But then: Short break." Before that Magnet sometimes on and off, to see if PETRA can work without it.

17.10 Now the left compressor went off 2 times.

18.00 Though display shows still "Short break" PETRA is injecting, as we see from the beam lamp. After a call, display went to "Injection." We drive our magnet up.

18.30 "Short Break." Magnet down.

18.45 Over-Temperature horn. Both Compressors off - (Temp. Rise was within 5 min.)
We decide that this is an insane game and we might ruin both electronics and cooling system. So: Electronics off and no data taking until repair work on the cooling system. Magnet to minimum value for PETRA (1500 A.)
One Person per shift as watch. Disco off with the on-line help of Cords.

Silly PETRA-Program. The cannot stop the "Switch On the HV" + Acoustical Signal if our HV stays off. So for the time being I plugged out the control cable for Lead Glass. The promise to do something about it. If they can't, it means for us throwing the hidden, forbidden switch before and after injection.

Now the compressor behave well. (P = 20 A.). But there are strong reasons that they cannot cool down our full load of watts.

Takeda went home. All Terminals in the Software-House turned off. NORD still On (Only power is on)

21:30 Takeda replaced Krehbiel

Monday 17/5/82

00:00 Rowe

PETRA not doing too well either! (They improve at about 2:30)
No trouble with air conditioning

4:00 Hellenbrand on shift
LUMINOSITY RUN only from 2:30 to 5:30

8:00 Uomamiya, Heier
8:40 Repair of cooling-system will start in ~2h according to Mr. Schult
8:50 Mr. Schult explained that only the pump will be exchanged because the repairing of the heat-exchanger will be a bigger effort.
9:57 PKR wants to have the JADE-magnet 'on' during the next filling. They also want to have the 'Freigabe' signal for the next injection. We switched on the corresponding crate (tagging-system HT control). This will probably have no big effect on the temperature in the hardware room.
10.10 The pump is replaced
11:00 Air condition system up again
call all experts for switching on
12.11 PETRA dumped beams, our magnet is switched on
13:00 New beams are ready.
Before switching on the HV's, HV of LEADGLASS and BP set anew from disc values
13.03 Beams lost again. ID trip just during runup. Two DL8's are missing. (holds in NORD WIRE MAP)
14.20 "SWITCH OFF THE HV" Then "Short Break." Telephone call revealed: Break ca 7h. Pluto wants to enter the expt.

Run	Date	Start	Stop	at Run start I_+	at Run start I_-	DT (%)	Time (s)	Rec out	All $\times 10^6$	T_0 rej $\times 10^6$	T_1 ACC Sum	T_2 ACC Sum	T_1 Bit 2 $E_\gamma > 6$ GeV	T_2 Bit 17 $2T \cdot E_\gamma \cdot 2\tau$	Rejection NSD	Rejection MIP	Rejection TOF	$\langle L \rangle$ $\times 10^{30}$	$\int L dt$ Run	$\int L dt$ Exp	IBM TAPE	BP [V]	T2 Rej Ev Fr (%)	Bhab.	MH	E_{beam}	Remarks
192	16.00	Monday	May 17, 1982.	Nozaki & Loebinger.																						

~~15.00~~ No new log book (costs 160.00 DM !!) available till tomorrow. We will write little & small!
16.45 Stable beams. Heidelberg experts still fixing DL8's.
17.00 New log book arrive!
17.40 Heidelberger allow new run to start.
17.50 I.D. multiple-soft alarm.
18.19 ID trip without alarm.
18.35 Beam lost
19.45. Mometary power feilure. TV screen goes blank. Could only get T.V. operational again by NORD reload.

21.00 Still no beam — "Kurze Unterbrechung" — ring magnet down to 500.
~~21.50~~
22.50 Beam at last. Start run 11264
23.15 Found no lead glass trigger — due to tripped power supply — reset O.K.
23.10 Reset H.V. of the lead glass counters.
Reset H.V of the BP.
23.56 ID trip due to high background. — we inform PKR who will try to improve beam conditions. (B.P. counts ~ 1.5V). In meantime we pause & switch I.D. H.V. off.

18-MAY-'82

0.00 Haidt & Odaka on shift.
0:13 We found a noisy BP counter (#24). BP current is ~0.8V, pulling off the cable #24.
:23 switched on ID, and restarted Run 11265.
:30 HV of ID was switched off automatically without any alarm, which was due to high BP current. This happened 3 times.
:40 We telephoned PKR to ask what happened, but they said they had no explanation.
:45 We switched on ID again.
1:00 ID trip without any alarm again.
PKR found how to make the beam stable.
Indeed BP current is now rather stable. (0.7 ± 0.03 V)
1:13 IBM TRANSFER ERROR, 54 SUBERR 140000 → terminated Run 11265
1:15 " → " Run 11266 (very short run, 31 events)
:20 We tried to start a new run but failed in the link with IBM. Run 11267 does not exist.
We tried again. Run 11268 started successfully.
1:58 ID trip without alarm
2:07 "
3:15 Beams dumped.