TRADE LOGBOOK XVI

-Erzeugnis

TRADE LOG BOOK

XVI

31.5.85 ÷ 31.8.85

Russ. 21042 ÷ 22501

31st MAY 1985

08^{00} Hughes + Kuhlen

09^{00} Gas Check Done.
09^{32} Beams Dumped.
10^{40} check of Beampipe chamber taken out of SPY - This should have been done when the voltage was lowered - it is in the JDAS manual! Not doing this runs the risk of shift crew ignoring real errors.
12^{00} Luminosity available Run #21046 started
Magnet Current low. — found not on computer control — Cannot change by hand. Neither RAISE nor LOWER
Tagg MFR 63 — HV's low. Reset Manually in Hall

Richard Hedgecock called re Magnet. Current 7368 A
BPC chamber had trip — Ramche, Kado Waking Voltages
12^{53} R Hedgecock unable to 'fix' Magnet; Current still ~~dropping~~, low 7378 A
Call MKI — probably at lunch; they have been asked to contact us.

13^{23} Magnet now o.k., set to 7500 A by hand

13^{53} Missing Watchdog flag PARAMS = 000002 140204 (oct)
+ Lam's missing B/C 3/2; 1/1; 1/1; all events close together.

1600 Becker & Clarke
16.15 VTXC trip.
16^{24} Gas check
16^{48} ESPY : Trigger 2 output missing : 135
16^{54} JDAS err. 53 + "No events ..." PAUSE / CONT.
18^{48} Missing LAM 4 4 c 6 1 Δ ring 2
System occasionally loses triggers — a PAUSE/CONT seems to cure.
22^{15} LECROY SYSTEM PROCESSOR 2280 — LANCASTER (RAL) MODULE IS REPAIRED AND IS SITTING ON MY OFFICE DESK. CRH.

THIS DOES NOT NOW EXIST. CRH RETURNED TO LECROY. 3.6.85

RUN	DATE	START	STOP	AT RUN START I⁺	AT RUN START I⁻	DEAD TIME (%)	TIME (sec)	RECORDS IN	RECORDS OUT	ALL ×10⁶	TØ REJ. ×10⁶	T_1 Acc SUM	T_2 Acc SUM	T_1 Bit2 $E_{LG}>6$ GeV	T_2 Bit 17 $2T\cdot E_H\cdot \geq 2T_1$
21042	31.5.85			only Pedestals											
21043	"	7.02	7:48	5.73	6.08	18.2	2705	8002	3872	704	128	3841	6045	883	32
21044	"	7.49	8.45	4.91	5.37	13.4	3156	8001	3962	821	109	4584	5640	1021	18
21045	"	8.46	9.32	4.00	4.49	15.0	2348	6184	2839	610	91	3242	4416	780	22
21046	"	12.03	13.05	5.14	5.32	15.0	3002	8002	4013	781	116	4405	5824 6501	1055	32
21047	"	13.09	14:06	4.14	4.47	14.4	3390	8002	3993	882	126	4874	~~4577~~	1248	29
21048	"	14:06	14:10	3.38	3.72	11.4	142	364	178	37	4	213	239	54	1
21049	"	15,13	16.07	5.53	4.42	13.7	3145	8002	4110	818	111	4672	5631	1218	24
21050	"	16.07	17.05	3.85	3.25	12.7	3276	8002	3866	852	108	4884	5421	1317	31
21051	"	17.06	18.05	3.84	3.28	11.9	3540	8002	3724	920	109	5038	5289	1290	37
21052	"	18.05	19.02	3.29	2.82	11.8	3382	7115	3123	880	104	4603	4637	1208	16
21053	"	20.00	20.54	4.51	6.14	18.0	3155	8002	4174	821	148	4435	5824	1202	27
21054	"	20.54	21.56	3.70	5.14	13.4	3096	8002	4022	806	108	4704	5543	1268	35
21055	"	21.47	22.39	3.12	4.49	12.8	2785	6638	3136	725	93	4069	4537	1082	13
21056	"	23.30	·	5.57	5.88	16	2815	8002	4228	733	116	4486	5537	1212	37
21057	16.85	0:19	1:10	4.68	4.94	15	3059	8001	3997	796	115	4880	5384	1344	29
21058	"	1.12	2.08	4.07	4.16	12,5	3317	8002	3965	863	110	4883	5443	1343	21
21059	"	2:08	3:04	3.56	3.62	11,6	3292	7414	3391	857	99	4735	4956	1308	28
21060	"	4:30	5:19	5:09	5:47	15,1	2912	8001	4037	758	114	4440	5480	1127	23
21061	"	5:19	6.12	4.4	4.8	13.9	3142	8002	3884	817	113	4570	5357	1193	26
21062	"	6:12	7:11	3,82	3.67	12,8	3307	8002	3816	861	110	4719	5436	1184	26
21063	"	7:11	7:57	3.25	3.66	12,2	2521	5929	2745	656	80	3560	4056	891	22
21064	"	9:17	9:44	5.61	5.85	16.1	1590	4618	2477	414	67	2518	3201	616	27
21065-2	1067	Not	existing	or	junk										
21068	2.06.85	1.55	2:43	5.45	5.82	17.2	2779	8002	4263	723	124	4279	5580	962	23
21069	2/06/85	2.43	3:40	4.18	4.99	13.6	3148	8001	3907	819	111	4377	5657	977	34
21070	"	3.40	4:38	3.53	4.30	12.1	3437	8001	3696	894	108	4578	5649	1009	27
21071	"	4:38	4:48	3.08	3.71	11.6	584	1401	660	152	17,6	787	956	174	5
21072															
21073	2.6.85	8:26	9:13	5.90	5.74	16.3	2808	8002	4394	731	119	4033	5924	953	38
21074	"	9.14	9.28	5.12	4.82	14.1	298	915	514	77	11	552	542	145	2
21075	"	10.09	10.52	5.84	5.82	18.7	2677	8002	4413	697	131	4170	5788	1020	36
21076	"	10.52	11.05	4.95	5.10	14.7	757	2159	1210	197	29	1207	1520	303	7
21077	"	13.53	14.26	5.60	5.53	16.9	2788	8001	4082	725	123	3849	5674	864	39
21078	"	14.26	15.18	4.75	4.61	14.5	2560	8001	3944	770	111	3967	5760	949	33

Processors ON/OFF N50	MIP	TOF	FAMP	⟨L⟩ 10^{30} cm⁻²s⁻¹	Bhabha $\int L\,dt$	$\int L\,dt$ EXP. energy 4533.36	IBM/TAPE OUTPUT	At Run Start ID [μA]	At Run Start TOF [V]	ONLINE REJ. SUM MIPROC T_2 %	ONLINE REJ. NORD-50 T_1 & T_2 %	Σ_{Bhabha}	MH	E_{beam}	Mag. Field ~1 Gauss	Remarks
ON	ON	ON	OFF	3.64	9.01	4548.37	IBM	2.2	1.1	35	53	102	1	21.800	4841	VTXC at 1000 V
"	"	"	"	3.67	11.49	4559.86	"	1.1	0.65	43	52	130	1	21.802	4843	
"	"	"	"	2.80	6.18	4566.04		1.0	0.52	37	55	70	2	21.800	4844	Beams dumped
"	"	"	"	3.32	10.78	4576.82	"	2.4	1.5	43	51	122	0	21.800	4.748	} Magnet Power Supply Problem
"	"	"	"	3.07	10.51	4587.33	"	1.0	1.0	48	51	119	2	"	4752	
"	"	"	"	3.78	0.44	4587.77	"	"	"	46	54	5	0	"	4854	Beams dumped; Magnet ok.
"	"	"	"	3.84	10.78	4598,55	"	1.7	1.2	46	50	122	2	"	4837	
"	"	"	"	3.06	9.72	4608,27	"	1.0	0.8	48	53	110	2	"	4835	
"	"	"	"	2.61	7.69	4615,96	"	0.8	0.45	49	55	87	2	"	4841	
"	"	"	"	1.87	6.01	4621.97	"	0.6	0.35	51	58	68	3	"	4835	Beams dumped
"	"	"	"	2.64	7.07	4629.04	"	1.0	1.8	45	49	80	3	"	4846	
"	"	"	"	2.87	7.95	4636.99	"	1.0	0.7	56	51	80	1	"	4835	
"	"	"	"	1.97	5.12	4642.11	"	0.9	0.6	48	54	58	1	"	4837	Beams dumped/lost
"	"	"	"	4.26	12.00	4654.11	"	1.2	1.5	43	49	125	4	"	4855	
"	"	"	"	3.43	10.49	4664.60	"	1.0	0.7	47	51	104	2	21.802	4834	
"	"	"	"	2.53	6.54	4671,14	"	0.9	0.6	48	52	74	3	21,8	4834	
"	"	"	"	1.93	6.54	4677.68	"	0.8	0.5	51	56	74	1	"	"	Beams dumped
"	"	"	"	3.81	10.78	4688,46	"	1.6	0.7	42	51	122	3	"	4831	
"	"	"	"	2.56	7.16	4695,62	"	1.0	0.5	42	53	81	3	"	"	
"	"	"	"	2.33	6.54	4702,16	"	0.95	0.75	45	54	74	0	"	"	
"	"	"	"	2.02	4.53	4706,75	"	0.9	0.7	47	55	52	2	"	4832	Beams dumped
"	"	"	"	3.84	5.57	4712.62	"	1.4	0.9	42	48	63	1	"	4834	Beams lost
"	"	"	"					~~1.65~~	~~0.9~~						4845	
"	"	"	"	4.32	10.07	4722.69	"	1.65	0.9	39	48	114	3	21.802		
"	"	"	"	3.26	9.36	4732 05	"	1.30	0.66	42	53	106	3	"	4845	
"	"	"	"	2.47	8.66	4740,71	"	1.15	0.55	44	55	98	3	"	4844	
"	"	"	"	2.34	8.1.75	4741.86	"	1.0	0.46	44	55	73	0	21.800	4847	Beams dumped
																No data & beams lost
"	"	"	"	4.17	11.04	4752,90	"	1.3	1.3	40	47	125	2	21.800	-4840	
"	"	"	"	3.75	1.15	4754.05	"	1.1	0.7	44	46	13	0	21.800	-4841	beams lost
"	"	"	"	4.02	10.78	4764.83	"	1.3	1.3	42	47	122	2	"	-4842	
"	"	"	"	3.93	2.57	4767.80	"	1.1	0.9	45	46	31	0	"	-4844	beams lost
"	"	"	"	4.01	10.51	4778.31	"	1.4	1.1	35	52	119	0	"	-4849	
"	"	"	"	3.27	8.75	4787.06	"	1.2	1.1	38	53	93	6	"	-4850	

1.6.85

0⁰⁰ Dietrich & Heinelmann on shift

0³⁰ Gon checked

8⁰⁰ Weber and Kawagoe on shift
8²⁵ Vertex chamber Alarm beeping. Indicator in Rucksack says "valve failure".
8³⁰ beams ready, but soon lost before run start.
9⁴⁴ beams lost
→ ~~TV~~ TV screen for the PETRA Info, disappeared. } simultaneously
magnet down
temperature Alarm.

10⁰⁵ DL8's off
11.10 The reason for the temp. alarm is the failure of the watersystem - We get ~~water~~ no cooling water from the cooling pond ~~was from the well~~. There seems to be a short circuit in the pumping system; the Kraftwerkleute are trying to fix it, so we are told; The air conditioning system is now switched to well water, till cooling pond water is available again; DL8+FADC off
13.45 DL8's and FADC's are now switched on again, but 1 DL8 crate does not go on.

13.45 PKR says that they are now reeling the tunnel in order to fix the interlock; hope to switch on soon.

Note: Before we can turn on JADE-Magnet we have to restart the magnet and heatshield cooling systems. Also the air conditioning system will have to be switched to cooling pond, but this is not our task!

15.00 PETRA TV-monitor: "we are testing injection, restart at 16.00"
15.45 " " " restart not before 17.00 ; MK 1- people do not answer phone. I tried to get them to turn on the cooling pumps, since I do not know which buttons to push, but they are not available, apparently busy with the accelerator!

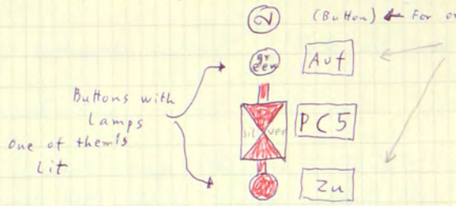
16:00 Becker and Hellenbrand on shift
- power pack of DL8 crate Nr. 1 brand 5 changed, now all DL8 crates are on
- gas check
19:25 magnet ready to switch on
Rumors say that switching on a compressor at CELLO caused all the todays trouble.
19:45 magnet raised to 7500 amps by hand. Magnet did not react on computer control

0⁰⁰ Clarke & Krehbiel on shift likely
This shift: If the VTC-PC beeps and howls, it is mostly valve fault in the gas house. When it happened the first time, Ramcke was called via Euro-Beep. Temporary Cure: see below

1.25 Beams back Funny hangups after run start. First: VTC-Crate Bs 1 Ct 1 was still off.
After reloading the VTC Processors: Funny hangup after the first pedestal event. No more events, no error outputs. This happened at several trials. Only complete NORD reload helped

VTCH - Valve - Failure - Temporary - First - Aid:
~~Go~~ Enter the Gas House (take the key with you). In the left corner stands the VTCH Gas Rack.
Two Lamps in the top row: Betrieb (Betrieb) (Störung) Störung

"Betrieb" should be always on. If "Störung" is on, proceed as follows: In the rack, at about the height of your throat (mine, correct for Mills-Schneekloth) is a structure about like this:



For orientation only, do not press

The Lamps in the buttons tell you how the valve really is. If the "Störung" is on, the valve is not as is should be. Press the non-lit button for a second to bring the valve to the desired state. Wait some seconds. If after some flickering the "Störung" is still on, try again. If trying 10 times does not help, call expert.

2⁴⁰ Lots of Errors JDAS R. ERROR 46 - MP 16 out of sequence (2×)
33 - Missing LAM branch 4 crate 6 (~~3×~~) IIII
45 MP-16 analysis incomplete several
52 controlword 000600

3⁰⁰ ff Sometimes ToF ~~has~~ rate going up causing soft trips. Petra says "Q-West trips" when you call them they usually can do something about it.
ERROR 33 Miss LAM br 4 cr 6

6.20. Run 21072 started, terminated due to errors in LC-PED runs, however beams lost simultaneously!
7,05 VTCH-Valve failure - performed HK's "throat operation", reset OK
7,43 Beams on again & immediately lost causing ID/z/VTXC trips.

8 h Elsen & Haidt on shift
8:40 missing LAM br 4 cr 6 ID ring 2 Gas check done
2 cr 8 ToF 1

9[26] beam lost - before head tip
10[37] JDAS error 46 MP-16 out of sequence TY = 1
74 wrong LAM branch 1 crate 1 : beam pipe chamber
33 missing LAM branch 4 crate 6 ID ring 2
14[32] HV error

16[00] K.Kawagoe & H.Mills on shift

HV error of the LG distributor 12 & 13 is due to the drifting of HV. power supply Barrel Z, caused probably by the high temperature. It is still drifting, so I ~~wait~~ until it will be stable.

16[50] TRIGGER 2 OUTPUT missing 183

17[00] Beams dumped. Discs backed up.
21[10] At last - beams!
23[32] beams lost JETCHK BPCH trip.

3.6.85

00,00 Matsumura & Darvill on shift.
00:35 Gas Check done
4 VTX Trip
2:03 MP-16 OH Problem: Processing incomplete → No Event
3.20 Z-chamber trip
4:10 We agree with Mark J and PKR to have a new filling.
5:12 Beams now ready
5:29 Z chamber trip
5:45 Z chamber trip
5:51 Z chamber & vertex chamber & ID trip
7:05 -- -- -- -
7:12 -- -- -- -
7:51 Beams dumped

8[00] C. Kleinwort and H. Rieseberg here.
Zeitweiser Zugang für Tasso. RESTART Ca 15[00]
~~Today they move out of the beam.~~ They want to by-pass the leaking water circuit of the Tasso Magnet - and hope that this part of the coil ~~is~~ will then be cooled by the neighbouring windings.

Our magnet to zero. It refuses to come down! Only RESET RUN DOWN helps. (Same problem as on Friday, see page 1)
Don't switch on the magnet! The cooling system is disconnected and undergoes a maintenance

8[30] Gas check done
10[50] Miproc-16 loaded, and set ON Tests possible with magnet available only, for this afternoon J.O.

12[30] R. Hedgecock and J. Olsson have tested two repaired Lecroy 2280 Processors in the Tagging Crate. One is not working at all and the other gives false interrupts. The Argus spare processor (which also gives a few false interrupts) is still the best and stays in for the time being.
14[00] Magnet control doesn't work, use manual to raise and lower until Elsen is back! J.O.

14[55] On TV: Injection → short break

16[00] Susan Cartwright on shift (Beate will come at 18[00], if no beam before then)

16[15] Gas check done. TV still says "short break". PKR don't answer their phones

16[30] PKR (Lenske) says they have trouble with a power supply, don't know when they will get beam, maybe within the next hour (optimist!)

17[15] Current in PETRA — but can't raise magnet
Beate arrives - phones MKR - someone will come.
18.35 Finally we managed to switch on the magnet. It turned out that the Stufentrafo was stuck and had to be moved by hand.
19[00] Magnet walked down from 7800 to 7200 A by itself and refused to be reset. It did respond to RESET/RUN DOWN but could not then be raised again.
19.53 Magnet ok again, Start run 21095.

20[22] Bad event structure, faulty part 1017 time appears on TV, goes away again.
20[30] No alarms, but VTXC and 1Δ suddenly start going down. No alarm in Rackwade either. Switch on again and they come back OK.
20[42] Same again
20[50] Hard trip of 1Δ (hence ZC) and VTXC — anode current. Both again drift trip, while ramping up
20[53] System route watchdog flag PARMS = 000002 140204; missing LAM for 2 or 3

RUN	DATE	START	STOP	AT RUN START I⁺	AT RUN START I⁻	DEAD TIME (%)	TIME (sec)	RECORDS IN	RECORDS OUT	ALL *10⁶	TØ REJ *10⁶	T₁ ACC SUM	T₂ ACC SUM	T₁ B+2 E_Lg >6GeV	T₂ B+17 2T·E_Lg ≥ 2T_h
21079	2/6/85	15^36	16^32	4.10	3.74	12.2	3336	8002	3755	868	106	4305	5866	932	24
21080	"	16^35	16^56	3.51	2.87	11.3	1235	2788	1223	321	36	1604	1994	372	4
21081	"	21^13	21^57	6.05	6.03	20.1	2666	8002	4058	694	139	3780	5571	863	21
21082	"	21^58	22^46	5.26	4.89	15.7	2874	8001	4168	748	118	4108	5649	1018	29
21083	"	22^47	23^32	4.50	3.97	13.3	2687	6956	3340	698	93	3748	4944	886	30
21084	3/6/85	00^20	01^11	5.58	5.74	18.9	2732	8002	4200	710	134	4073	5580	999	33
21085	"	01^12	02^01	4.69	4.93	15.1	2952	8002	4015	768	116	4313	5639	1037	27
21086	"	02^04	02^46	4.06	4.32	17.3	2522	8002	3287	657	114	3408	4278	782	25
21087	"	02^47	03^34	3.66	3.92	13.6	2624	8002	3092	683	93	3450	4288	749	28
21088	"	03^34	04^20	3.28	3.53	12.7	2713	8002	2989	706	90	3462	4258	774	28
21089	"	04^20	04^23	2.97	3.21	12.9	124	433	169	32	4	179	204	35	14
21090	"	05^14	06^14	5.44	5.84	28.8	2470	8002	3651	642	185	3250	4346	750	41
21091	"	06^16	06^57	4.42	4.93	19.0	2464	8002	3372	641	122	3405	4271	843	27
21092	"	06^58	07^48	3.95	4.45	14.9	2599	8002	3253	677	101	3469	4251	875	28
21093		07^44	07^52	3.48	3.96	17.5	174	589	250	45	8	266	278	70	15
21095	3/6/85	19^53	20^23	3.64	3.67	125	1482	3444	1651	386	48	1826	2642	860	16
21096	"	20^23	21^05	3.41	3.67	12.5	1684	3636	1787	425	53	2246	2623	363	10
21097	~~3/6/85~~	23^09	0^11	3.94	4.07	11.4	3709	8002	3496	965	110	4242	5976	759	25
21098	4/6/85	0:12	1:17	3.35	3.54	11.2	3855	8002	3457	1002	111	4585	5795	889	18
21099	"	1^18	1^46	2.89	3.04	10.8	1598	3246	1311	416	45	1904	2259	340	10
21100	"	4:50	5:37	5.08	5.24	16.7	2814	8002	3495	731	122	3720	5755	840	31
21101	"	5:37	6:05	4.27	4.55	15.0	1370	3311	1594	355	49	1655	2610	346	15
21102	"	6:39	7:25	5.97	6.15	20.4	2657	8002	3958	702	143	3631	5814	883	28
21103	"	7^24	8^12	5.24	4.92	16.2	2827	8002	3816	736	119	4023	5713	996	~~28~~ 14
21104 & 21106	A "	found due to computer problems													
21107	"	8^53	9^51	4.22	3.85	13.8	3428	8002	3648	892	123	4495	5610	1077	29
21108	"	9^59	10^27	3.54	3.32	13.2	1277	2782	1200	332	44	1580	2020	367	5
21109	"	14^05	14^10	3.98	2.82	14.1	275	648	289	72	10	332	466	69	2
21110	"	14^12	~~14^46~~	3.92	2.76	11.4	2017	4397	1944	525	60	2457	3218	495	15
21111							Junk								
21112	"	16^02	16^22	5.25	4.66	15.3	876	2474	1174	228	35	2916	1872	318	11
21113	"	19^11	19^18	3.96	4.37	9.9	367	1025	467	95.4	9.5	551	688	127	5
21114	"	19^32	19^47	3.77	4.16	9.9	890	2336	1060	23.2	11.0	1968	1682	308	9

Processors ON/OFF NSD	HIP	TOF	FAMP	⟨L⟩ 10^{30} cm⁻²s⁻¹	Bhabha $\int L\,dt$ nb⁻¹	$\int L\,dt$ EXP. ENERGY	IBM/TAPE OUTPUT	AT RUN START ID (mA)	AT RUN START TOF (V)	ONLINE REJ. SUM HIPROC T₂ %	ONLINE REJ. NORD-50 T₁·T₂ %	Σ Bhabha	MH	E beam	Mag. Field −1.8 Gauss	Remarks
ON	ON	ON	OFF	2.13	7.16	4794.22	IBM	~~1.0~~	~~1.0~~	44	55	81	3	21.800	4850.	
"	"	"	"	1.69	2.39	4796.61	"	1.0	1.0	46	58	27	0	"	4849	Beams dumped.
"	"	"	"	4.20	10.25	4806.86	"	2.0	1.1	34	51	116	4	"	4840	
"	"	"	"	3.39	8.92	4815.78	"	1.5	0.8	39	50	101	1	"	4841	
"	"	"	"	2.53	6.54	4822.32	"	1.4	0.7	42	54	74	1	"	"	beamslost
"	"	"	"	3.95	10.78	4833.10	"	1,2	1,1	38	50	122	3	21.800	4837	
"	ON ~~OFF~~	"	"	2.97	9.37	4842.47	"	1,3	0,7	42	51	106	0	—	4834	
"	OFF	"	"	2.33	~~5.74~~	4848.21	"	1,0	0,6	5	61	65	3	"	4835	
"	OFF	"	"	1.98	~~4.51~~	4852.72	"	1,0	0,6	4	63	51	0	—	4835	
"	"	"	"	1.72	4.68	4857.30	—	0,8	0.5	3	65	53	0	"	4834	
"	"	"	"	1.91	0.18	4858.48	"	0,8	0.5	7	64	2	0	—	4834	Beams dumped
"	"	"	"	3.14	6.80	4865.28	"	1,7	1,3	7	57	77	4	21.802	4832	
"	"	"	"	3.16	7.60	4872.88	"	1,2	0,7	5	60	86	1	—	4834	
"	"	"	"	2.59	6.80	4879.68	"	1,0	0,6	4	61	77	0	—	4834	
"	"	"	"	2.32	0.53	4880.21	"	0,8	0,65	2	60	6	1	"	4834	
"	ON	"	"	1.60	2.56	4882.77	"	1.1	1.0	44	54	29	0	"	4838	
"	ON	"	"	1.24	1.33	4884.10	"			49	54	15	0	"	4840	Beam lost
"	"	"	"	2.29	7.51	4891.61	"	1.2	0.65	43	58	85	0	21.800	4847	
"	"	"	"	1.70	6.85	4898.50	"	1.1	0.45	46	59	78	3	"	4847	
"	"	"	"	1.38	1.68	4900.18	"	0.5	0.4	46	61	19	0	"	4847	Beam dumped
"	"	"	"	3.37	8.13	4908.31	IBM	1.8	1.1	33	56	92	1	"	4847	
"	"	"	"	1.86	2.03	4910.34	"	1.6	0.8	42	57	23	0	"	4847	Beam dumped
"	"	"	"	3.72	9.01	4919.35	"	1.9	1.2	33	52	102	1	"	4847	
"	"	"	"	2.84	7.95	4927.30	"	1.7	0.8	37	54	90	3	21.800	4847	
								1.3	0.6							
"	"	"	"	1.98	6.72	4934.02	"	1.3	0.6	44	56	76	3	"	4850	
"	"	"	"	1.64	2.30	4936.32	"	1.1	0.5	46	59	26	0	"	4850	Beams lost
"	"	OFF	"	1.59	0.53	4936.75	"	1.0	0.55	43	59	6	1	"	4844	
"	"	"	"	1.46	3.71	4940.46	"	1.0	0.55	47	58	42	0	"	"	~~Beams~~ lost
								~~1.8~~	1.25							Run summary lost! Why?
"	"	"	"		3.00	4843.46	"	~~1.5~~	0,85			34	0	"	"	Beams lost
"	"	"	"	2.63	0,80	4944,26	"	1,4	0,7	37	56	9	0	"	-4844	No vertexchamber Bad DIS
"	"	OFF	OFF	2.37	3,27	4947,53	"	1.3	0.6	40	56	37	1	"	-4844	- " - " - Beamloss

20[58] Mipro-16 analysis incomplete. YY=1 ||

21[01] TOF rate suddenly huge – everything trips – beam lost.

21[50] New beams lost during background optimisation – we never even get a run started.
23[12] Missing LAM Br 4 Cr 6 – ID ring 2

NOTE: ALL TAG HISTS EMPTY except Tagging Patterns.
to we are getting lumi events, its probably not so critical.
We went to D. Darvill's flat anyway and left a message for him. Try to find him in the morning if he doesn't turn up by then.
└ He's in shift at 8 !

23[50] Missing LAM Br 4 Cr 6 ID ring 2

4/6/85

0[00] Kawagoe & Spitzer on shift

0[20] Z chamber trip

2[00] Missing LAM Br 7 Cr 5 ID 7. rig. Rubber does not help.
Replace DL8 #18 (124) wires 992-999 by #17. ⇒ "Illegal Jet Chamber Data"
Two other DL8's give the same problem. Also, frequently when switching on the power, one gets alarm signal. The error is not continuously present. Try it out.
DL8 finally left in: # 265

6[00] DL8 looks OK

8[00] Darvill & Kleinwort on shift.

8[23] Nord 50 hangs up – we reload – then get "bad event structure" Faulty part 1017
we call HEM who then talked us through Reloading of Direct Tasks – Now it works.

9[55] DL 8 errors (1.4.1, wires 784-791, missing timing bit 64, 8.3.1 wires 992-999, mixed raw timing bits) cured by contacting 2

10[20] Beams lost everything tripped.

10[40] Airconditioning alarm trips – we call MKK and discover at the same time as help arrives that there are already two people carrying out routine maintenance on one machine!
11[00] Now I have time to call PKR to ask the cause and expected duration of the short break. A vacuum valve has failed and been replaced and they begin to inject.
11[27] Airconditioning system now seems to be working.

Computer problems. Many "Bad Event Structure" and "No Head Bank" even in simple test runs. Reloading MIPROC-16, rebuilding system & SDAS do not help. Same problem on recent backup disc so it seems unlikely to be a corrupt disc.
After a lot of fiddling, error is suddenly gone. We traced it to a pointer in NSO being 1 too small. ⇒ ALV is sometimes miscalculating or transfer from memory is not OK. (Wacker!) 3.0.
14[00] We start to take data again. Tagging processor will be inspected in next fill period
14[10] Run 21107 stopped by missing LAM in Br 1 Cr 6 (VTXC), all triggers. Start next run, OK again (?)
14[14] Temp. Alarm in DL8 area: 19.2° several times. It's a fine, warm day!
14[47] beams lost, every chamber trips
15[00] Switched off FADC-Gates (VTXC) C.K. (Temperature ≥ 19°C)
15[15] Hall-temperature alarm – open hall doors – speak with man from MKK who is already here looking at the klimaanlage

15[30] The sprinkler system is now installed on the roof of the counting room in an attempt to supplement the klimaanlage. It should be switched off each evening and on again as required.
15[50] Parts of beams lost, trips: (Hard) VTXC, (Soft) ID, TC
16[00] Darvill, Olsson The temp. alarms continue ~~R2HH Run summary lost, has not been closed~~ saved!
(Dickmann comes at 17°)
16[30] It seems that a magnetic valve of the Klimaanlage is broken
and that only 2 of the 3 compressors work. Tomorrow morning 7[00] they will start to exchange the valve – takes about 12 hours –. Hopefully 2 compressors will be enough for the night
R-Test
16[37] Temp >21,1° All DL8's off, FADC too
17[10] DL8 on again, plan to run without VTXC and Fadc's. Temp now at 19.8, oscillating.
18[01] Gas shede done.
19[00] Tagging processor repaired and put in again. The Argus one also behaved funny since yesterday.
1 ADC in Tagging Crate found bad replaced. Now Tagging is OK. Start R 21113
Bad JETC data, finally saved

TOF processors worked for a while, then again no response.
We switch them off, low priority for investigation.

RUN	Date	START	STOP	At Run Start I^+	At Run Start I^-	Dead Time %	Time sec	Records In	Records Out	ALL $\times 10^6$	TP Rej $\times 10^6$	T_1 Acc Sum	T_2 Acc Sum	T_1 B+F $E_{ec} > 6$ GeV	T_2 B+F 17 $2T \cdot E_{ec} > 27$
21115	4/6-85	20 35	21 17	5,96	5,91	21,3	2543	8002	3962	661	46,5	3714	5927	916	36
21116	"	21 18	22 08	5,24	5,17	17,3	2609	8002	3780	679	117	3941	5837	1043	33
21117	"	22 08	22 56	4,53	4,28	12,0	2830	8001	3610	736	88	4005	5773	1085	30
21118	"	22 56	23:43	4,04	3,80	11,3	2634	6786	3140	684	77	3802	4776	962	24
21119	5/6/85	1 58	2:44	6,16	5,88	13,7	2731	8001	3848	710	97	4141	5750	1070	31
21120	"	2:44	3:32	4,97	4,88	12,3	2834	8002	3737	737	91	4227	5706	1172	24
21121	"	3:32	4:24	4,39	4,27	10,8	3102	8002	3505	807	87	4482	5683	1185	30
21122	"	4:25	4:39	3,87	3,62	12,6	830	2047	868	216	27	1198	1389	322	2
21123	5/6/85	6:17	7:02	5,52	5,84	13,4	2699	8002	3728	702	94	4052	5608	1045	32
21124	"	7:03	7:49	4,67	5,19	13,2	2745	8002	3775	714	94	4159	5599	1168	21
21125	"	7:49	08 06	4,14	4,66	12,1	1088	3097	1391	283	34	1691	2074	436	6
21126	"	20:21	21 53	4,90	5,49	14,5	2679	8002	4190	697	101	4062	6246	1179	31
21127	"	21.33	21:41	4,18	4,81	13,8	415	1262	633	107	17 12	655	987	188	6
21128	6/6/85	0:13	1:05	5,07	5,24	12,3	3081	8002	3702	802	99	4476	5878	1321	28
21129	"	1:05	1:56	4,65	4,81	10,3	3041	8001	3612	791	82	4697	5592	1502	25
21130	"	1:56	2:50	4,23	4,39	10,3	3169	8002	3772	825	85	4385	5296	1544	29
21131	"	2:50	3:48	3,83	3,99	11,5	3458	8002	3490	900	103	5018	5486	1544	15
21132	"	4:31	5:16	6,14	5,37	13,4	2669	8002	4063	694	93	4462	5469	1342	37
21133	"	5:16	5:25	5,15	5,21	12,7	492	1521	785	128	16	853	1055	292	6
21134	"	5:25	6:11	5,03	5,11	12,4	2743	8001	4110	714	88	4629	5755	1514	39
21135	"	6:12	6:28	4,55	4,64	11,3	960	2706	1376	250	28	1640	1936	513	11
21136	"	7 06	~~7 55~~	~~4,88~~	5,55	4,88	2920	~~8002~~ 4100	4215	760	88	4589	5952	1364	45
21137	"	7 56	8 43	6,04	4,41	11,7	2812	8002	7820	732	86	4601	5678	1444	27
21138	"	8 52	8 57	2,03	2,31	7,6	115	301	127	30	2	194	152	42	0
21139	"	10 33	10 59	5,29	4,35	13,2	1044	2984	1439	272	36	1425	2442	395	16
21142	"	11 04	12 55	4,52	3,66	11,8	3053	8002	3500	795	94	4416	1357	~~1287~~	26
21143	"	12 56	13 50	4,14	3,32	10,1	3216	8002	3385	887	84	4631	5522	1362	28
21144	"	14 00	14 40	3,72	2,92	15,1	1938	4494	1890	515	78	2554	3034	791	13
21145	"	14 47	14 49					340	340		"No	LATCH	BANK"	due to	BPCh trippings
21147	"	15 47	16 13	5,89	5,64	26,3	1255	4076	2002	326	85	1737	3369	494	22
21148	"	16 55	17 37	5,69	5,92	22,1	2542	8002	3591	660	145	3314	5712	887	21
21149	"	17 39	19 02	5,22	5,44	20,7	1387	4797	2545	361	74	1930	3207	568	15
21150	"	18 12	18 43	4,89	5,11	17,7	1839	5821	2624	478	84	2754	4410	839	24
21151	"	18 52	19 41	4,52	4,74	13,0	2426	6991	3214	631	82	3717	4994	1078	24

Processors on/off N50	μ16	TOF	FAPP	<L> 10^{30} cm^{-2}s^{-1}	Bhabha $\int L dt$ nb^{-1}	$\int L dt$ Exp. Energy	IBM/Tyan Output	Run start ID (μA)	Run start TOF (V)	Online Rej Sample μ16 T_2 %	Online Rej N-50 $T \& T_2$ %	Σ Bhabha	MH	E_{beam}	Mean field kGauss	Remarks
on	on	off	off	4,01	8,39	4955,92	IBM	2.0	1.2	32	52	95	2	21.800	-4844	
"	"	"	"	3,07	7,95	4963,87	"	2,0	0,9	34	54	90	2	"	-4843	
"	"	"	"	2,48	5,83	4969,70	"	1,7	0,8	38	56	66	3	"	-4840	
"	"	"	"	2,08	4.24	4973.94	"	1,4	0,65	41	55	48	3	"	-4841	Beam loss
on	on	off	off	3.95	10.43	4984.37	IBM	1.7	1.15	37	53	118	1	21.800	-4837	
"	"	"	"	3.09	6.63	4991.0	"	~~1.5~~	0.75	38	55	75	2	"	4838	
"	"	"	"	2.26	5.57	4996.57	"	1.3	0.65	42	57	63	1	"	4837	
"	"	"	"	1.88	2.39	4998.96	"	1.1	0.6	43	59	27	0	"	4837	beams dumped
on	on	off	off	3.96	9.81	5008.77	IBM	1.7	0.95	34	55	111	2	21.800	4838	
"	"	"	"	3.03	7.51	5016.28	"	1.7	0.75	35	54	85	0	"	4838	
"	"	"	"	2.26	2.21	5018.49	"	1.5	0.7	36	56	25	0	"	4838	beams dumped
"	"	on	"	1.54	2.92	5021.41	"	1,6	1.0	41	49	33	1	21.804	4852	
"	"	"	"	1.08	0.35	5021.76	"	1.4	1.3	41	52	4	0	21.802	4855	beams lost
ON	ON	ON	OFF	1.72	5.12	5026.88	"	1.3	0.8	43	55	58	5	21.802	4850	
"	"	"	"	1.77	5.57	5032.45	"	1.2	0.7	44	56	63	1	"	"	
"	"	"	"	1.90	5.74	5038.19	"	1.0	0.55	47	54	65	3	"	4849	
"	"	"	"	1.61	4.68	5042.87	"	0.85	0.45	49	57	53	0	"	"	beams dumped
"	"	"	OFF	3.31	8.75	5051.62	"	1.5	0.95	33	50	99	2	21.804	4847	
"	"	"	"	2.61	1.86	5053.48	"	1.15	0.8	41	50	21	0	"	4848	
"	"	"	"	2.70	6.72	5060.20	"	1.15	0.8	45	50	76	2	21.802	4847	
"	"	"	"	2.69	1.94	5062.14	"	0.8	0.85	48	50	22	0	"	"	beams half lost, half dumped
"	"	"	"	2.64	5.65	5067.79	"	1.0	0.8	~~46~~ 48	48	64	0	"	"	
"	"	"	"	2.52	6.54	5074.33	"	0.85	0.75	44	53	74	3	21.804	-4848	
"	"	"	"	0.44	0.00	5074.33	"	0.5	0.4	41	64	0	0	"	-4847	half lost, half dumped
"	"	"	"	2.25	2.30	5076.63	"	1.1	1.17	40	53	26	0	21.802	4847	stop due to high temperature
"	"	"	"	1.84	5.92	5082.55	"	1.5	0.6	38	57	67	1	"	4850	
"	"	"	"	1.56	5.74	5088.29	"	1.4	0.7	42	59	65	4	21.804	4849	
"	"	"	"	1.03	1.84	5090.23	"	1.2	0.5	44	60	22	0	21.802	4847	VTXC-Data
run	start							1.1	0.5							Beams Dumped.
"	"	"	"	3.22	4.86	5095.09	"	1.4	1.4	40	52	55	1	21.802	4847	Beam lost
ON	ON	ON	OFF	2.17	4.68	5099.77	"			30	58	53	1	21.802	4847	This Junior ILLEGAL SETdata ✓
"	"	"	"	1.98	1.33	5101.10	"	2.0	1.0	24	49	15	1	"	"	
"	"	"	"	1.66	2.92	5104.02		2.0	1.1	34	56	33	0	"	"	Run stopped due to IBM OFF
"	"	"	"	2.18	5.04	5109.06	"	"		38	55	57	2	21.800	4844	Beams lost

20^{35} start R 21115, new fill
Missing LAM 84 C6 occurred occasionally during this shift — ILLEGAL JETC data after 6000 words
DL8-temp at midnight: 17,4° Alarm still switched off! Sprinkler still running on roof!
Read out Pattern = 777378 (No VTX ch.)
SET-CAM 0 1778 378 4X1778 (No VTX ch.)

5.6.85 Hellenbrand und Kleinwort
0:00 Transmitter-Error, Restart: 3 am? on TV, we did not run down the magnet, because nobody
0:15 gas check — guaranteed that we could raise it afterwards
1:30 Injection started
Temperatur in hardware room 20.4°C
2:00 " " 19.5°C
RUN 21119 started
DDAS READOUT ERROR 33 - MISSING LAM board 4 crate 6: I.D. Ring 2 every 10 minutes
6:15 New filling, same problems →
6:45 temperature in hardware room 19.2 °C

Air Condition Control disabled
(not plugged in)

08^{00} HEDGECOCK & KAWAGOE
08^{08} PKR announce that we run down the HV. Jour have access for TASSO to enable them to work on their magnet.
RUN: DOWN MAGNET. — SWITCHED ISOLATOR OFF
KLIMA ANLAGE - Maintenance men arrive and switch off system for checks.
All DL8 crates switched off.

08^{45} At about this time:- Spontaneously, ① the VTX alarm came on and ② the colour TV went clear and Lam 9 gave us the message TO RESTART JDAS etc. - I read the manual as instructed and at the second attempt, things happened, hopefully in the right sequence!

10^{53} Another spontaneous "Restart JDAS"

$930-11^{05}$ Magnet at 6500 A for ID Rej. Now OFF

New JDAS manual text - slightly shorter than previous one (HEH)

Air conditioning broken. Turning system back on. Difficulty turning crate 7 branch 2 on.

13^{45} Spontaneous loading of computer!
14^{00} A bug in program for magnet steering was found by the author (E. Elsen) and repaired. It seems that computer control of magnet is now without problems. If you see a problem, please tell Eckhard!

16.00 Darvill and Kuhlen on shift
17:00 Gas check
18.00 Temperature hovering around threshold for temperature alarm
18.20 Decision of the vertex chamber crew:

The vertex chamber ~~also~~ and FADC should be off even for data taking.

20.21 Beams at last! we start run # 21126.
Immediately we get a message "Illegal Jete Data"; we look to see if we can see anything obvious and as we are about to call an expert when the message goes away.
20:33 I.D. soft trip. We have a high background. It seems that PKR are trying to correct the orbit.
We switch off the Z-chamber.
20:55 Things are more stable now. we switch on Z-chamber and Jetchamber and restart the run.
20:58 ~~Jetchamber trip~~ Z-chamber trip
21:41 beams lost "Short Break" PKR have a problem with a septupole circuit
Orange disco-lamp changed,
23:45 we printed the histograms for run no. 21126 and found that the Bunch Marker (Regular) histogram was empty.
We call Koelbel and he directs us to a rack where we find a cable has been removed and not replaced.
We replace it, do a short test run and look at the histogram. The data is there again!
23:55 The airconditioning equipment is still unable to keep our hardware area below 19°C. Throughout this shift the temperature has oscillated between 19.2°C and 19.6°C. The water sprinkler is still on.

6/6/85
0^{00} U. Schneekloth + P. Warming on shift
sometimes readout error 33 - missing lam br 4 cr 6
0^{20} gas check done
2^{50} increasing number of readout errors 33 - missing lam br 3 cr 2

6/6/85

3:35 we ask for a new fill at 3:45
4:25 new fill ready
temperature in hardware room is now ~18.5°C
5:15 YVOLTS reported "primary HV wrong for LG distributor 21, HV = 1.871, should be 1.99C
cannot find anything wrong, is it a readout error?, we start a new run for safety reasons
Unlikely ; readout error it would say so
Cuky should starting a new run help LG voltages!

8⁰⁰ Kawagoe & Ramcke on shift

8²⁰ YSPY ERR ; TOF TDC NO HIT 60 ... seems ok. in Histograms
8⁴³ All chambers tripped. About half of beams lost.
9⁰⁰ PER ; short break.
10¹⁶ Air condition Alarm. temperature = 19.3°
10²⁰ Temperature alarm T = 20.1°C ⇒ FADC OFF Call MKS-people : after lunch, there will come experts!
10³⁰ " T = 19.1°C, T = 19,9°C (10³⁹), T = 20.3°C (10⁴⁴), T = 20.7°C (10⁴⁵), T = 20.4°C (10⁴⁷)
10³⁴ ID-soft-trip
10⁵⁷ Temperature in hardware room 21.1°C DL8 OFF!
11⁴¹ Temperature is now 17.2 °C start Data taking.
But " Missing LAM branch 6 crate 3 : ID Ring3 > pi " (R21140/1 have no available Data)
so cannot take data. call I.D. expert.
a DL8 was replaced. seems OK. start Run.
12¹⁰ Missing LAM branch 4 crate 6 ; ID Ring 2 appeared 3 times.
12¹⁶ ILLEGAL JETC DATA
12⁵⁵ JOBS READOUT ERROR 33 Missing Lam br 4 cr 6 ID Ring 2 3X
R 21145 has no LATCH BANK. because ~~it~~ at the start of the Run VTX chamber ~~was~~ tripped.
R 21146 " "
15⁴⁵ possible to switch on Vorten chamber, R 21147 start.
15⁵² Vtx ch. & I.D. soft trip.
15⁵⁵ " "

16⁰⁰ Mills & Magnussen

16¹³ Most of e^- beam lost.
16⁵⁰ New beams ready
17⁰⁹ Complained that luminosity was too low for those currents. PKR say they are chasing some problem that causes instabilities.

18⁰¹ Run stopped to investigate ILLegal JETC data. Also to take Beampipe chamber from readout. (77737B)
18⁴⁴ IBM busy - IBM Ops say they have switched off for ~15 minutes.
NO-one informed the experiments. Maybe it was not intended to affect us.
18⁵² Link returns - running commences again.
19²² All chambers tripped part of the beam lost
19⁴⁰ Beams lost - everything trips

23¹⁹ JET ch tripped - then our beam pickup showed RED, the Nord system reloaded itself (could be powerfail) and PETRA had lost ~~to~~ one of the selection bunches.

7.6.85 0⁰⁰ Chviu + Becker

1²² Start run : JDAS readout err 50 : Camac crate offline br. 5
1³³ HV error LG
1⁵⁵ JDAS err. 33 - missing LAM br. 4 cr. 6
3⁴³ HV wrong LG { Distrib. 12 < 13 HV = 1.89 shall ≤ 1.87 }.
3⁵⁷ Jdas Readout error 33 - Missing Lam branch 3 cr 2 : muon chambers
4⁰³ " " " " " " 2 cr 4 : TOF2 counters
4¹³ HV wrong LG { Distrib 12 HV = 1.887 ; 13 HV = 1.898 shall ≤ 1.87 }
4³⁰ Jdas Readout error 33 - Missing Lam branch 4 cr 6 : ID Ring 2
HV wrong LG { Distr. 12 HV = 1.883 ; Distr. 13 HV = 1.883 shall ≤ 1.87 }
4³⁷ Jdas Readout error 33 - Missing Lam branch 4 cr 6 : ID Ring 2
6²⁰ JDAS error 33 - missing LAM br. 3 cr. 2 : μ-ch continuously - Stop run
Restart JDAS - does not help
6⁴⁰ Reload NORD - " " "
7¹⁵ call to J. Olsson : hardware problem - he will come
muon ch HV at -x+z station wildly oscillating ⇒ cure postponed, HV off for the time being
8⁰⁰ Hagenau, Spitzer
μ-Crate : Crate Controller exchanged (twice, due to destroyed Highway contact) ⇐ no difference
LAM-Grader cleaned with contactspray. ⇒ error much rarer but not gone. ⇒ watch it over day... J.O.

8³⁵ Gas check done

Run	Date	Start	Stop	RUN START I^+	RUN START I^-	Dead Time %	Time (sec)	Records IN	Records OUT	ALL $\times 10^6$	TØ REF $\times 10^6$	T_1 Acc SUM	T_2 Acc SUM	T_1 Bit2 $E_{LO} > 6$Gev	T_2 Bit 17 $2T \cdot E_T \geq 2TR$
21152	6.6.85	20:14	20:58	6.17	6.23	13.0	2642	8002	4177	687	89	4427	5824	1251	37
21153	"	20:59	21:44	5.51	5.58	12.4	2694	8002	4089	702	87	4622	5750	1270	33
21154	"	21:44	22:34	4.94	5.00	11.9	2935	8002	3832	764	90	4732	5649	1335	31
21155	"	22:34													
21156	7.6.85														
21157	7.6.85	01:30	2:21	5.55	5.46	10.3	2981	8002	3818	776	85	4451	5845	1128	44
21158	"	2:21	2:31	4.97	4.82	11.5	484	1528	828	126	15	866	1001	216	7
21159	"	3:40	4 29	5.83	6.19	11.3	2942	8002	4043	765	86	4476	5863	1168	31
21160	"	4:29	4:48	5:18	5:53	12.1	1058	2868	1460	275	33	1709	2148	462	5
21161	"	5:28	5:30	6.01	5.78	10.8	70	206	116	18	2	111	148	27	0
21162	"	6:16	6:20	6.03	5.87	43.7	205	464	277	53	23	272	272	43	2
21163	"	6:21	6:28	5.87	5.81	48.6	337	654	372	88	44	394	378	64	1
21164	"	6:31	6:37	5.82	5.78	68.7	228	276	171	58	42	172	163	35	0
21165	"	6:46	8:02	5.61	5.69	36.7	3179	7263	4070	827	303	4518	4659	1115	70
21166	"	8:02	8:16	4.72	4.72	32.2	738	1750	974	192	61	1110	1062	279	7
21167	"	8:43	9:10	4.34	4.33	12.7	1595	4174	2057	415	53	2589	2881	805	16
21168	"	9:10	9:53	4.10	4.04	15.0	2500	6003	2897	650	97	3708	4044	1125	16
21169	"	9:57	10:07	3.75	3.66	33.8	540	991	471	141	48	580	731	186	3
21170	"	13:06	13:45	5.77	5.77	16.8	23031	7184	4311	599	100	4269	4368	1252	23
21171	"	16 43	1704	4.03	3.95	12.8	11867	2701	1341	309	40	1681	1765	398	6
21172	"	20 54	21 42	5.42	5.72	18.1	2805	8002	4154	729	132	4187	5254	1320	29
21173	"	21 42	22 31	4.83	504	19.6	2919	8001	3886	759	149	4228	5260	1380	29
21174	"	22 34	23.00	4.32	446	15.5	1533	4225	1985	399	62	2354	2712	717	16
21175	"	23 53	0 42	5.82	5.85	20.1	2663	8002	4284	693	139	4435	5229	1471	29
21176	8.6.85	0 43	1 10	5.08	5.10	19.9	1635	4423	2243	425	85	2558	2861	809	18
21177	"	2 13	2 59	5.83	5.57	17.9	2723	8002	4184	708	127	4542	5135	1444	24
21178	"	2 59	3 46	5.22	4.96	16.1	2756	8001	4126	717	115	4598	5201	1534	35
21179	"	3 47	4 25	4.70	4.43	15.2	2291	6187	3058	596	90	3600	4062	1124	19
21180	"	5 16	5 42	5.92	5.92	17.9	1565	4854	2707	407	73	2555	3330	796	14
21181	"	6 57	7 20	5.83	6.07	17.1	1351	4722	3103	351	60	1909	2975	632	13
21182	"	7 27	7 36	5.31	5.65	16.2	500	1573	872	130	21	850	930	260	3
21183	"	7:47	8:48	4.90	3.91	14.4	3163	8001	4041	823	118	4538	4992	1344	29
21186	"	9:17	9:42	4.10	3.13	14.6	1434	3294	1537	373	54	1964	2071	580	10
21187	"	9:46	10:35	3.90	2.94	11.4	6420 2955	2800 6420	2800	768	87	4091	4189	1165	15

Run	Processors ON/OFF NSo	MIP	TOF	FAMP	<L> 10^{30} cm^{-2} s^{-1}	Bhabha $\int L dt$ nb^{-1}	$\int L dt$ EXP ENERGY	IOM/TAPE OUTPUT	At Run Start ID (μA)	At Run Start TOF (V)	Online Rej. SJT MIPROC T_2 %	Online Rej. LUMD-SD $T_2 \cdot T_2$ %	Σ_{Bhabha}	MH	E_{BEAM}	Mag. field −1 = GAUSS	Remarks
21152	ON	ON	ON	OFF	4.03	9.19	5118.25	IBM	1.3	1.1	42	49	104	3	21.800	4844	
21153	"	"	"	"	3.49	7.69	5125.94	"	1.0	0.2	45	51	87	2	"	"	
21154	"	"	"	"	2.41	6.63	5132.57	"	0.8	0.8	45	53	75	1	"	"	No summary due to possible comm. failure?
21155									0.8	0.7							No summary. Reason unclear
21156									1.0	0.8							No event. Run stopped due to off-line.
21157	"	"	"	"	3.37	8.66	5141.23	"	1.0	0.8	43	53	58	4	"	4842	
21158	"	"	"	"	3.43	1.15	5142.38	"	0.5	0.8	38	47	13	0	"	4841	beams dumped
21159	"	"	"	"	4.34	11.22	5153.60	"	1.2	0.9	43	51	127	3	"	4840	
21160	"	"	"	"	3.59	3.45	5157.05	"	1.0	0.75	45	52	39	1	"	4841	beams lost
21161	"	"	"	"	5.16	0.27	5157.32	"	1.2	1.0	48	48	3	0	"	4841	beams lost
21162	"	"	"	"	2.53	0.62	5157.94	"	1.2	0.9	38	43	7	0	"	4841	TDAS err 33
21163	"	"	"	"	2.50	0.62	5158.56	"	1.2	0.8	38	45	7	0	"	4841	" " "
21164	"	"	"	"	1.34	0.08	5158.65	"	1.2	1.1	47	41	1	0	"	4840	" " "
21165	"	"	"	"	2.98	6.71	5165.36	"	1.2	1.1	35	45	76	3	"	4850	" " "
21166	"	"	"	"	2.05	1.06	5166.42	"	1.0	0.7	44	46	12	0	"	4850	" " "
21167	"	"	"	"	2.61	3.27	5169.69	"	0.8	0.6	48	52	37	2	"	4841	run stopped for read out pattern change
21168	"	"	"	"	2.10	6.27	5175.96	"	0.7	0.6	49	54	71	1	"	4842	VTXC back in read out
21169	"	"	"	"	1.57	0.44	5176.40	"	0.7	0.5	51	55	5	1	"	4843	run stopped CAMAC problems
21170	"	"	"	"	0.44	9.10	5185.50	"	1.2	0.85	41	41	103	1	"	4844	beams lost
21171	"	"	"	"	0.21	2.65	5188.15	"	0.8	0.6	49	52	30	0	"	4841	beams partly lost
21172	"	"	"	"	4.57	12.81	5200.96	"	1.3	0.85	38	50	145	3	"	4838	
21173	"	"	"	"	3.23	7.77	5208.73	"	1.3	0.9	39	54	88	5	"	"	
21174	"	"	"	"	2.94	3.99	5212.62	"	1.2	0.8	42	56	44	1	"	4837	beams lost
21175	"	"	"	"	4.45	11.75	5224.37	"	1.4	1.0	42	49	133	3	"	4837	
21176	"	"	"	"	3.70	6.10	5230.47	"	1.2	0.8	44	52	69	0	"	4837	Beams lost
21177	"	"	"	"	4.18	10.51	5240.98	"	1.3	1.1	43	50	119	4	"	4838	
21178	"	"	"	"	3.56	8.92	5249.90	"	1.1	0.9	44	51	101	6	"	4838	
21179	"	"	"	"	3.01	7.51	5257.41	"	1.0	0.8	45	53	85	0	"	4835	Beams lost
21180	"	"	"	"	4.70	6.45	5263.86	"	1.3	1.5	40	47	73	0	"	4834	Beams lost
21181	"	"	"	"	5.37	5.30	5269.16	"	1.4	2.3	45	36	60	2	"	4835	Run stopped due to illegal fee data
21182	"	"	"	"	4.87	2.47	5271.63	"			34	47	28	0	"	4835	" "
21183	"	"	"	"	2.60	7.42	5279.05	"			42	52	84	2	"	4834	Run stopped for DAQ exchange
21186	"	"	"	"	1.33 1.76	2.74	5281.79	"	0.6	0.5	44	56	31	1	21.802	4834	21184-21185 test runs
21187	"	"	"	"	1.84	5.12	5286.98	"	0.6	0.5	50	58	58	1	21.800	4834	Beams dumped

9[50] Missing LAMs br. 3 cr 2. (Muon)
Sys. cr. watchdog flag PARMS = 000002 140204 (oct)
Missing LAM br 1 cr 1 (Beampipech.) many, many times. Stop Run.
Test run ok. Start run # 21163.

10[05] run stopped errors as above. then DMA timeouts Latches
Errors do not come in test runs! Only with real data!!
There seems to be two problems.
1) Missing LAMs in Muon crate
2) The above missing LAMs cause the BP readout to fail in some way.

The ZETRO cooler died this morning. Mr. Seidel has installed a cooler which is conneded to tap water. A technician from ZETRO will come today or tomorrow.
Please read ID temperature T_1 every ~~two~~ second hours in the rucksack Reinberg
12[00] 26.0°C

12[00] TASSO asks for ~ 1/2 hour access time at end of next fill.
12[10] have tried to solve the muon ch HV problem
9 ch's draw too much current even at much reduced voltages
these 9 ch.'s disconnected from HV, all other ch.'s in the -x+z station are operational again
reason for overcurrent not known at present, have to investigate later Pfeiffer
13 Missing LAMs from μ-chamber: In the fill-time, all units in μ-crate were taken out and cleaned and sprayed. Everything worked fine in between with μ chamber. At start of run with real data, 1 miss. LAM from μ-chamber was seen and thereafter several thousand events without it.
Note: For unknown reasons, μ ch missing LAM is followed by verbrech missing LAM which is repeated every trigger. Can be saved by PAUSE/CONTINUE
Probably a software bug, will be investigated... T.O.

11[00] Zetro seems to be repaired, it is working. (T_1 = 26.6°)
Cleaning and oil charge will take place this afternoon.

14[20] PETRA has power supply problem; TASSO is losing their access time.

15[15] Injection

16[00] A. Finch + U. Schneekloth on shift

17[10] We noticed that clock was at 10 Hz. This explains why SECONDS w10 a too high for runs #21170 and #21171. Also too tagging luminosity? according to p12 JDAS Manual too low.

18[25] VTXC anode current signal sent to PKR, ID signal disconnected. J. Bürger

JDAS READOUT ERRORS:
21:54 Missing LAM br. 1 cr. 1: DP CH. co: 10 times
22[07] " frequently, also JDAS READOUT ER. 53, Syst. cr. watchdog PARMS = 000002 140204

23[20] VTXC gas alarm - pressure too high - at rack +1.1/c in rucksack
23[35] Under instruction from expert via telephone the flow F2 was adjusted in GAS HOUSE. It is not optimal but it should be o.k.

0[00] Magnussen + Komamiya
0[00] Gas check done ID
0[21] ID ≠ VTC (soft e hard) trip
1[10] Three chambers hard trip ← Beams lost
2[00] Beams ready
2[40] μ digitizer missing #148
2[45] VTC trip → data taking continued.
4[26]
5[40] Beams lost → Three chambers tripped
6[00] Vertex chamber error (gas system?) phone to C. Ulbricht
it was a valve failure. The expert gave instructions via telephone. We cured the problem
6[55] Beams ready
" VTC tripped
" No Latch bank" → "pause/continue" → looks O.K.
7[00] ~~μ~~ μ digitiser missing #148
Illegal Jetc data keeps flashing; stays for longer periods even.

7.33 μ digitisers missing # 145
7.35 Stopped run 21182 a/k/ call to Riesberg. He will come and check

7.42 VTCH hard trip; part of the beam lost
7.53 VTCH —"—
7.54 —"—

Saturday 8/6/85 Michael Kuhlen & Fred Loebinger.

08.10 Gas check done — O.K.
9.54 Ringley exchanged one DC8, 'illegal JETC data' stays. After reloading the host the error seems to be gone.
11.35 Several JDAS error 33 — Missing LAM br 1 cr 1 B.P. chamber.
Cured by PAUSE CONTINUE.
15.20 VTX ch. hard trip. (at start of new fill).

16[00] G. Heinzelmann and H. Riesberg on shift.

Frequent: NO TRIGGER BIT (148 in Run # 21192)
Trigger bit histograms are normal — no: see J.O.s comment

16[30] Gas check done
16[40] J. Olsson comes to investigate the NO TRIGGER BIT problem. The broad capacitive trigger is often missing in the readout. When it is the only trigger, "No trigger bits" result. This is also obvious in trigger bits

No NO TRIGGER BIT problem as long as H. Krelbiel is here
18[15] beams dumped
18[50] New fill ready. Start Run 21196
L (deadtime corrected) = $6.2 \cdot 10^{30}$
19[10] Stop run. We have Missing LAM in B2 C6 (Leadglass ADC) continuously.
H. Krelbiel investigates the trigger system and finds a broken power supply, which was probably marginal or oscillating before.
Power supply of the lower ECL crate in Rack 7 exchanged.

19[56] Run 21197 started: No errors! All missing trigger bit, ~~and~~ missing LAM etc ~~gone away~~ have vanished
20[28] High TOF rate, VTXC trip Q_3, part of beam lost
21[15] New fill ready. Run 21198 started
21:35 short period with many (46) NO TRIGGER BIT errors, again.

9.6.85

0.00 Finch & Krelbiel on shift
0.45 Beams dumped
1.15 Beams up again, Fine conditions
1.32 Beams partly lost, then dumped. VTCH hard trip. LD soft trips. All beeps and howls.
2.00 Beams back
Run 21203 JDAS Errors 74 Wrong LAM br 1 cr 1 BP ch
45 MP-16 incomplete
33 Miss Lam br 4 cr 6

3:33 'NO TRIGGER' — Krelbiel is sleeping! — PAUSE/CONTINUE cleared it
3:39 Brief 'no events to record' + JDAS error 44 — MP-16 analysis incomplete YY=1

7:50 'Illegal JETC data' briefly
3:57 Everything trips - partial beam loss - then total beam loss
4:26 New fill ready
Vertex chamber HV alarm when turning on - after reset it is OK
4:38 Soft trip, then beams dumped. BACKGROUND WENT CRAZY ⇒ SOMETHING BACKFIRE AFTRA
5:39 RANG PETRA to ask what problem is. Broken power supply/transmitter - hope to re-start soon.
7.00 Beams back again, but not at full current, ~~EP~~ 4, BC - 5.37 mA, high lifetimes ≥ 8h
JDAS ERR 33 Miss LAM 4 cr 6 4x. Probably - one DIB was not flush in. (protruded slightly)
Altogether 4 times [NO TRIGGER BITS] in this shift.
7 40 Ramcke arrives, just in time to look after VTCH gas alarms.

08[00] Hedgcock & Ramcke
During Run 21212 JDAS ERROR 44 DMA TIMEOUT BR. 2 CR. 1 LATCHES = STOP and START a new ~~Run~~ run.
13[25] Z-CHAMBER TRIPPED ON ITS OWN.
VRTX SOFT TRIP
13[30] TEMPERATURE ALARM — WE HAVE A PROBLEM RAISING MKK.
JDAS ERROR 33 MISSING LAM BR 3 CR 2 MUON CHAMBERS. } THIS APPEARS
" " 53 SYSTEM WATCHDOG FLAG PARMS 000002 140204 (OCT) } AND THEN BECOMES FREQUENT.
ALL FAIK CRATES SWITCHED OFF. MKK ARMS BUT TEMPERATURE
FELL BACK TO 18.9/19.0 THEN REDUCED FURTHER. EVENTUALLY DOWN TO 17.8
SWITCHED FADC CRATES BACK ON.
RACK 4 CENTRE UNIT { DURING THIS PHASE, LG POWER SUPPLY FAILURE ALARM COMES ON, EVENTUALLY TRACED TO OVERTEMPERATURE ON CRATE POWER SUPPLY CAUSED BY STUCK FAN. REPLACED.

RUN	DATE	START	STOP	AT RUN START I^+	AT RUN START I^-	DEAD TIME (%)	TIME (sec)	RECORDS IN	RECORDS OUT	ALL $*10^6$	TO REC $*10^6$	T_1 ACC SUM	T_2 ACC SUM	T_1 BIT 2 $E_{LG}>6$ GeV	T_2 Bit 47 $2T\cdot E_{LG}>27$
21188	8/6/85	11:09	12:03	6.31	5.92	15.3	2937	8002	4001	764	117	4463	5365	1262	27
21189	"	12:03	12:51	4.90	4.29	17.2	2851	8001	4261	742	128	4485	5366	1331	36
21190	"	12:51	13:44	4.40	3.73	15.4	3111	8002	3983	808	124	4584	5589	1307	29
21191	"	13:44	14:13	3.95	3.24	13.8	1687	4260	2134	439	61	2563	2903	731	15
21192	"	15:24	16:11	5.32	5.04	15.7	2837	8002	4230	738	116	4359	5190	1111	26
21193	"	16:12	17:03	4.71	4.39	15.1	3057	8002	4108	796	120	4592	5318	1150	25
21194	"	17:04	17:41	4.12	3.83	19.8	2162	4987	2445	563	111	2942	3313	757	12
21195	"	17:49	18:17	3.69	3.43	13.5	1670	4076	1942	434	59	2468	2849	637	21
21196	"	18:53	19:10	6.03	6.10	21.7	965	3084	1801	251	54	1617	2027	713	15
21197	"	19:57	20:27	4.95	4.78	15.0	1748	4913	2617	455	68	2785	3259	681	26
21198	"	21:16	22:01	5.85	5.91	18.1	2731	8002	4482	710	128	4304	5508	1063	36
21199	"	22:02	22:51	5.05	4.81	15.0	2928	8002	4359	762	115	4504	5506	1173	43
21200	"	22:52	23:45	4.37	4.11	14.0	3175	8002	4081	826	115	4631	5546	1222	26
21201	"	23:46	0:45	3.77	3.54	12.4	3503	8002	3786	912	113	4777	5511	1172	19
21202	9/6/85	1:18	1:32	5.83	5.78	16.7	737	2270	1247	192	32	1205	1505	292	14
21203	9/6/85	2:06	2:52	5.85	5.83	17.2	2694	8002	4534	707	120	4390	5428	1134	31
21204	"	2:57	3:43	5.07	4.61	15.9	3009	8001	4248	783	127	4579	5468	1138	25
21205	"	3:47	3:57	4.36	3.74	13.7	812	2494	1076	211	29	1217	1414	309	9
21206	"	4:32	4:38	5.81	5.69	16.8	276	885	522	72	12	470	588	125	4
21207	"	7:05	08:00	5.37	4.86	13.3	3238	8001	4131	843	112	4491	5346	909	26
21208	"	08:00	09:00	4.73	4.24	14.0	3397	8002	3997	885	123	4574	5547	1057	30
21209	"	09:00	09:59	4.13	3.64	11.9	3481	8001	3712	906	108	4695	5534	1015	27
21210	"	09:59	10:42	3.63	3.17	11.7	2517	5462	2545	655	76	3388	3752	753	10
21211	"	11:18	12:07	5.86	5.92	17.1	2853	8002	4300	743	127	4295	5380	1042	31
21212	"	12:07	12:11	4.75	4.42	14.2	205	591	313	53	7.6	340	355	80	1
21213	"	12:13	13:00	4.65	4.32	18	2769	7154	3678	821	130	4618	4818	945	27
21214	"	13:01	13:40	4.04	3.72	29.0	1909	4039	2038	497	144	2329	2734	563	12
21215-17							LOST								
21218	"	16:14	17:11	5.55	4.72	12.8	3232	8002	4261	841	108	4287	5654	1025	28
21219	"	17:12	18:08	4.83	3.98	13.2	3312	8002	3985	862	113	4462	5703	1087	18
21220	"	18:09	19:10	4.24	3.44	12.0	3635	8002	3781	846	113	4586	5813	1086	28
21221	"	19:11	19:37	3.74	2.88	12.5	1527	3388	1547	397	50	1860	2365	433	7
21222	"	20:14	21:02	5.85	5.88	15.6	2878	8002	4205	749	117	4224	5638	1031	30
21223	"	21:03	21:58	5.15	4.51	14.9	3239	8002	3945	842	125	4453	5731	1127	22

PROCESSORS ON/OFF 150	MIP	TOF	FAMP	$\langle L \rangle$ $10^{30}\,cm^{-2}s^{-1}$	Blobba $\int L\,dt$ nb^{-1}	$\int L\,dt$ EXP. ENERGY	TAPE/DISK OUTPUT	AT RUN START ID (μA)	AT RUN START DF (V)	ONLINE REJ Sum trigger T_2 %	ONLINE REJ Hard SC $T_1 \& T_2$ %	Σ Blobba	MH	E_{beam}	Mag. Field -Amperes	Remarks
ON	ON	ON	OFF	3.76	11.40	5298.38	IBM	1.3	1.4	43	52	129	1	21.800	4835	
"	"	"	"	2.81	8.39	5306.77	"	1.0	0.9	45	49	95	2	"	4837	
"	"	"	"	2.04	6.98	5313.75	"	0.8	0.9	48	53	79	3	"	4836	
"	"	"	"	1.80	3.36	5317.11	"	0.8	0.9	50	52	38	2	"	4835	Beams dumped.
"	"	"	"	3.52	11.04	5328.15	"			39	49	125	3	"	4838	
"	"	"	"	2.90	8.66	5336.81	"	1.0	0.8	44	51	98	4	21.802	4838	No trigg bit problem (broad cosmics trig)
"	"	"	"	2.29	5.12	5341.93	"	0.8	0.6	46	53	58	3	"	4838	
"	"	"	"	2.01	3.98	5345.91	"	0.8	0.6	47	54	45	1	"	4840	Beams dumped
"	"	"	"	4.76	5.21	5351.12	"	1.3	1.1	38	44	59	1	"	4837	
"	"	"	"	3.45	4.68	5355.80	"	1.0	0.75	44	49	53	0	"	4838	Beams lost
"	"	"	"	4.45	10.51	5366.31	"	1.2	1.1	42	46	119	4	"	4837	
"	"	"	"	3.56	8.66	5374.97	"	1.0	0.75	45	48	98	5	21.800	4839	
"	"	"	"	2.54	8.08	5383.05	"	0.8	0.7	47	51	87	3	21.802	4834	~~Beams dumped~~
"	"	"	"	7.95	6.27	5389.32	"	0.7	0.6	48	55	71	1	21.800	4834	Beams dumped
"	"	"	"	4.95	3.53	5392.85	"	~~1.2~~ 0.95	~~0.95~~ 0.75	47	48	40	0	21.800	4834	conditions fine but Beams lost
"	"	"	"	4.39	12.46	5405.31	"	1.2	0.95	42	45	141	2	21.802	4834	
"	"	"	"	3.18	11.40	5416.71	"	~~0.9~~	~~0.68~~	46	49	129	5	21.800	4834	
"	"	"	"	2.86	2.92	5419.63	"	0.9	0.61	47	51	33	0	21.800	4834	beams lost
"	"	"	"	5.19	2.03	5421.66	"	1.2	1.1	39	47	23	0	21.800	4836	beams lost
"	"	"	"	3.79	12.01	5433.67	"	1.1	0.65	43	51	136	3	"	4834	
"	"	"	OFF	2.93	8.04	5441.71	"	0.9	0.58	47	52	91	1	"	4834	
"	"	"	"	2.26	7.33	5449.04	"	0.75	0.55	47	56	83	3	"	4835	
"	"	"	"	1.83	4.15	5453.19	"	0.65	0.5	50	55	47	2	"	4835	BEAMS DUMPED.
"	"	"	"	4.16	10.42	5463.61	"	1.3	1.03	41	49	118	4	"	4829	
"	"	"	"	3.71	0.53	5464.14	"	1.1	0.75	43	51	6	-	"	4843	run stopped
"	"	"	"	3.03	7.07	5471.21	"	1.1	0.73	44	51	80	0	"	4844	
"	"	"	"	2.07	3.36	5474.57	"	0.95	0.64	47	52	38	0	"	~~4844~~	
																Beams dumped
"	"	"	"	4.06	11.13	5485.70	"	1.1	0.7	46	48	126	5	"	4840	
"	"	"	"	2.53	11.04	5496.74	"	0.8	0.6	46	53	125	4	"	4841	
"	"	"	"	2.24	8.57	5505.31	"	0.8	0.5	58	55	97	4	"	4841	
"	"	"	"	1.58	2.92	5508.23	"	0.7	0.4	46	57	33	2	"	4841	beams dumped
"	"	"	"	4.60	11.22	5519.45	"	1.3	1.3	42	50	137	4	"	4840	
"	"	"	"	3.27	9.45	5528.90	"	1.0	0.8	45	53	107	1	"	4840	

DURING SHIFT

15[00] UP TO NOW – JDAS ERROR 33 MISSING LAM BR 4 CR 6 IDR 2 (≙ 15 TIMES)
" " 33 " " BR 2 CR 4 TOF 2 (≙ 5 TIMES)
" " 33 " " BR 2 CR 3 TOF 2 (≙ 5 TIMES)

The previous JDAS ERROR – MU CHAM. followed by the BP CHAMBER occured so frequently that we eventually stopped the runs.

15[10] The compressor of the MUON CHAMBER GAS SYSTEM is very noisy. (OMINOUS?)
LG HV failure yet again. Traced to faulty fan. Changed with/by Kawagoe.

16[00] Kawagoe, Becker
Gas check

16[15] Lam grader in muon crate cleaned. This has prevented missing lam muon chamber errors re-occurring, at least for the time being. Gilkin.

16[44] Vtx Chamber Soft trip
18[01] Z-Chamber trip
18[24] VTX chamber gas alarm → Gas house
18[04] Z-chamber trip
19[17] JDAS err. 33 often : PAUSE/CONT.
19[30] VTX chamber gas alarm → Gas house
19[33] YSPY : T2 output missing : 163
20[50] VTX chamber gas alarm. → Gas house again.
22[10] VTX chamber gas alarm → Gas house
22[19] YSPY : TOF TDC not hits = 860
22[30] JDAS error 33 – missing LAM br. 4 cr. 6 – often : PAUSE/CONT.
23[30] VTX chamber gas alarm

0.00 Monday 10/6/85 Jörg Hagemann & Fred Loebinger.

0.14 Gas check done
0.20 JDAS error 33 – I.D. Rig 2 (br. 4, cr. 6).
" " 45
1.38 JDAS ERROR 33 Missing LAM Br. 3 cr. 2 : Muon chamber
" " 53 watchdog
" " 33 missing LAM br. 1 cr. 1 : BPch

PAUSE – CONTINUE ⇒ O.K.

1.42 JDAS Error 33 – missing LAM br. 4 cr. 6 : ID ring 2
2.15 " " " " " " "
2.20 Z chamber (only) trip.
2.35 JDAS 33 br 4 cr 6 : ID ring 2
VTCH gas alarm.
2.42 JDAS 33 br 4 cr 6 : ID ring 2
3.50 " " " " "
4.00 " " " " "
4.05 " " " " " × 2
4.15 – JDAS 46 MP-16 out of sequence. TY=1
4.25 JDAS 33 br 4 cr 6 : ID ring 2 × 2
5.00 " " " "
5.20 " " " " × 2
5.30 " " " " × 2
5.55 " br 3 cr 2 muons. } × 3
" JDAS 53 Watchdog flag.
" JDAS 33 Br Cr 1 : Beampipe chamber × 5
6.00 VTX chamber trip
6.05 JDAS 74 : Wrong LAM br 1 cr 1 Beampipe chamber.
JDAS 33 : Missing lam Br 3 Cr 2 Muons.
JDAS 53 Watchdog flag. } together.
JDM 33 Missing LAM br 1 cr 1 Beampipe
JDAS 33 " " " "
6.15 JDAS 33 Br 3 cr 2 pass.
" 53 Watchdog.
" 33 Br 1 cr 1 Beampipe ch. × 4.
" 33 Br 4 cr 6 I.D. ring 2
6.17 JDM 33 Br 4 cr 6 I.D. ring 2
6.18 REFORM – job submitted
Same sequence again
6.20 Standard histogs show 1 wire missing in JET chamber.
6.22 JDAS error 33 missing LAM br. 4 cr. 2 : ID ring 2
6.26 Same sequence again

RUN	DATE	START	STOP	AT RUNSTART I+	AT RUNSTART I−	DEAD TIME (%)	TIME (sec)	REC. IN	REC. OUT	ALL ×10⁶	TO REC. ×10⁶	T_1 ACC SUM	T_2 ACC SUM	T_1 BIT 2 E_{LG} > 6 GeV	T_2 bit 17 2 T.E$_4$ > 2 TR
21224	9/6/85	21:58	22:58	4.52	3.87	14.3	3534	8001	3771	917	131	4618	5701	1167	26
21225	"	22.58	23.59	3.97	3.35	12.1	3620	8002	3601	941	113	4756	5593	1135	22
21226	10/6/85	0.00	0.29	3.52	2.93	11.7	1711	3682	1582	445	52	2192	2655	486	10
21227	"	0.59	1.48	5.95	5.96	16.7	2915	8002	4189	758	126	4170	5512	1087	21
21228	"	1.49	2.43	4.88	4.68	13.7	3096	8002	3922	805	111	4497	5452	1187	17
21229	"	2.43	2.48	4.01	3.92	13.4	117	347	180	30	4	193	200	36	3
21230	"	3.22	4.12	5.75	5.77	14.9	2950	8002	4110	767	114	4180	5587	1047	28
21231	"	4.12	5.05	4.77	4.50	13.5	3155	8002	3938	821	111	4462	5622	1169	24
21232	"	5.05	6.07	4.04	3.78	13.9	3525	8001	3605	917	127	4698	5649	1165	23
21233	"	6.07	6.46	3.39	3.21	14.1	2265	4807	2219	590	83	2824	3297	668	16
21237	"	10.48	10.58	5.84	5.51	10.5	1809	1435	706	140	14	747	1037	169	3
21238	"	10.58	11.22	5.68	5.27	14.4	1416	3733	1920	368	53	4543	2573	464	17
21239	"	11.36	12.27	5.14	4.63	13.5	3015	8002	6260	784	105	9418	5203	1007	27
21240	"	12.29	12.40	4.50	3.99	12.1	714	1854	1447	185	22	952	1248	227	4
21241	"	12.44	13.48	4.30	3.79	8.3	3707	5757	3412	965	80	7644	4345	1193	23
21242		14.19	15.25	5.11	5.66	14.5	3710	8002	4050	809	117	~~8727~~ 4329	5564	1105	26
21244		15.16	16.14	4.23	4.37	14.1	3441	8002	3702	896	106	4555	5583	1116	15
21245		16.14	17.00	3.58	3.50	14.5	3707	5987	2763	705	102	3516	4084	865	10
21246	"	19.10	19.39	6.10	6.09	15.7	1670	4724	2457	434	68	2425	3275	581	22
21247	"	20.09	20.17	6.27	6.29	21.0	432	1263	646	112	27	562	792	121	6
21248	"	20.44	21.41	6.05	6.08	19.9	2871	8002	4182	797	148	3931	5667	1022	28
21249	"	21.41	22.34	4.94	4.80	15.1	3140	8002	3965	816	124	4327	5696	1125	28
21250	"	22.34	23.30	4.20	4.02	14.0	3346	8001	3746	870	122	4548	5624	7095	23
21251	"	23.30	0.21	3.62	3.44	14.7	2782	5933	2620	724	107	3482	4149	815	19
21252	11.685	1.50	2.39	5.87	5.99	14.9	2941	8002	4061	766	114	4175	5646	986	25
21253	"	2.39	2.50	4.96	5.03	14.5	603	1630	835	157	23	891	1100	223	9
21254	"	3.42	3.43	5.61	6.01	0	0	75	47	0	0	31	0	1	0
21255	"	5.25	6.22	5.80	5.92	16.4	3122	8001	3948	812	133	3879	5526	932	24
21256	"	6.22	6.36	4.38	3.86	19.8	780	1627	751	203	40	923	1123	214	2
21257	"	6.38	7.28	4.24	3.72	13.6	2986	6329	2838	777	105	3325	4558	825	20
21258	"	8.01	8.58	6.06	6.09	15.0	3211	8002	3953	836	125	4298	5632	1079	29
21259	"	8.59	9.55	4.71	4.05	12.9	3393	8002	4285	883	114	4588	5483	1052	21
21260	"	9.56	10.56	4.08	3.46	12.7	3629	8001	3585	944	120	4772	5613	1117	29
21261	"	10.57	11.0	3.51	2.96	12.5	547	1252	581	142	18	733	841	171	4

NSD	HIP	TOF	FAMP	<L> 10^{30} cm^{-2}s^{-1}	Bhabha Stat nb^{-1}	$\int$ L dt Exp. Energy	IBM / TAPE	AT RUNSTART ONLINE REJ ID (μA)	AT RUNSTART ONLINE REJ TOF (V)	T_2 %	T_1+T_2 %	$\sum$ Bhabha	MH	E_{beam}	Mag. Field	Remarks
ON	ON	ON	OFF	2.58	8.48	5528.50 5537.38	~~IBM~~ TAPE	1.0	0.7	47	55	86	5	21.800	4840	
"	"	"	"	2.08	7.24	5544.62	IBM	0.7	0.5	48	57	82	2	"	4841	
"	"	"	"	1.77	2.74	5547.36	"	0.6	0.4	50	59	31	0	21.802	4841	Beam dumped
"	"	"	"	4.41	11.84	5559.20	"	1.4	0.9	40	50	134	6	21.800	4840	
"	"	"	"	3.24	11.31	5570.51	"	1.1	0.6	44	53	128	2	21.802	4841	
"	"	"	"	2.62	0.09	5570.60	"	0.9	0.5	41	52	1	0	"	4841	Beam lost
"	"	"	"	4.41	11.48	5582.08	"	1.3	0.9	41	51	130	5	21.800	4840	
"	"	"	"	3.08	9.19	5585.27	"	1.0	0.6	45	53	104	3	21.802	4840	
"	"	"	"	2.18	6.71	5591.98	"	0.9	0.5	48	57	76	2	21.803	4840	
"	"	"	"	1.72	3.89	5595.87	"	0.7	0.4	46	56	44	0	21.802	4841	Beam dumped
"	"	"	"	3.07	3.00	5598.87	"	1.2	0.7	38	52	34	0	"	"	No BPCH in readout
"	"	"	"	6.14	7.28	5606.09	"	1.2	0.7	40	51	66	1	"	"	Full readout
"	"	"	"	3.68	11.08	5617.17	"	1.1	0.6	32	22	128	1	"	"	2 Bhat μ-chamb and 2-ch
"	"	"	"	3.09	2.30	5619.47	"	1.0	0.55	33	23	26	0	"	"	" " " "
"	"	"	"	2.73	10.10	5629.57	"	0.9	0.5			87	1	"	"	" - beam lost
"	"	"	"	3.80	9.88	5639.55	"	~~1.2~~	~~0.8~~			113	0	"	"	all chambers back ~~on this~~
"	"	"	"	8.72	7.86	5647.41	"	1.0	0.6	45	56	89	3	"	4843	VTX-chamber 1500 V
"	"	"	"	2.01	6.01	5653.42	"	0.8	0.45	46	56	68	4	"	4844	Beam lost - " -
"	"	"	"	5.32	7.95	5661.37	"	1.35	0.9	38	50	90	1	21.802	4840	Beams lost, VTX 1775 V
"	"	"	"	5.2	1.77	5663.14	"	1.4	0.95	32	49	20	1	21.80	-4841	Beams lost
"	"	"	"	4.65	12.01	5675.15	"	1.5	0.9	37	50	136	4	21.800	4840	
"	"	"	"	3.45	11.84	5686.99	"	1.2	0.65	43	53	134	5	"	4841	
"	"	"	"	2.60	7.95	5694.94	"	1.0	0.52	46	55	90	3	"	4840	
"	"	"	"	1.98	5.74	5700.68	"	0.8	0.45	47	58	65	1	21.802	4841	Beams lost
"	"	"	"	5.00	13.43	5714.11	"	1.4	0.8	40	51	150	4	21.800	4840	
"	"	"	"	4.22	2.74	5716.85	"	1.1	0.7	41	51	31	0	"	"	Beams lost
"	"	"	"	0	0	5716.85	"	1.4	0.8	0	45	0	0	"	4841	Beams lost
"	"	"	"	3.96	12.19	5729.04	"	1.6	0.8	38	53	138	3	"	4838	
"	"	"	"	2.32	1.59	5730.63	"	1.0	0.45	45	56	18	1	"	4841	
"	"	"	"	2.38	6.54	5737.17	"	1.0	0.45	45	57	74	1	"	4840	Beams lost
"	"	"	"	3.98	11.75	5748.92	"	1.2	0.6	42	53	133	4	"	4840	
"	"	"	"	2.79	9.48	5758.40	"	1.0	0.5	45	48	100	2	"	-4839	
"	"	"	"	2.01	7.30	5765.70	"	0.9	0.45	49	57	84	1	"	-4840	
"	"	"	"	1.74	0.95	5766.65	"	0.7	0.4	46	56	13	0	"	-4840	

6.23 "Illegal CONT Record" Message on T.V. screen.

Why do instantaneous, specific and dead time corrected luminosities appear on the screen? — perhaps it is necessary to ask the question, as soon as I did, they appeared !!! (½ hour into run) —— Solution found. they disappear when run is paused and then take ~5min to reappear.

6.36 Usual sequence of missing LAMS

7.20. At start of new run. Several { JDAS 33 Missing LAM Br 6 Cr 3 Inner Det. ring 3, >pi
& false DL8's " "

Stop run & restart — same problem — Many times.
Take out LAM grader & clean contacts — No improvement.
Jan Olsson coming to the rescue.

10.6.85 8⁰⁰ Mich, Fest on shift

8⁰⁰ short break, restart ca 10⁰⁰, magnet 2500 A, magnet does not respond to computer but does work fine manually

8¹⁵ Jan Olsson and Karl Anton working on DL8 readout

8³⁰ The compressor of the muon gas system makes some strange noise, experts say it has to be replaced

8⁴⁰ Bk 6 : C3 DL8 problem: A suppressed pin was found in the DL8 cable, replaced with spare cable, test run with pulser OK. Ambors / Olsson Pin not reason for miss. LAM!

8⁴⁵ gas check O.K.

9¹⁵ Magnet control failure might will be repaired wednesday, when Olsson comes! (he is here! E.E)

10³⁵ Beams ready
Run 21236 Junk — BP chamber tripped
Tagging power supply 63 off

10²¹ Stopped run 21238 - compressor for gas system has to be repaired. this means Mu chambers and Z chamber out of readout. (77772B). Also remove 50 & 502 triggers since no way to filter them online.
Also Mu & Z chambers out of SPY.

12⁴⁵ Changed (repaired) bug in YPARAT, now all trigger changes appear on Teletype. from R 21240

13⁴⁵ Beams lost

14⁰⁰ Compressor for muon-chamber gas has been exchanged (in the morning), yes seems to be clean again and HV switched on to Mu and Z-chamber again

15¹⁶ from run 21244 VTX-chamber HV from 1475 → 1500 V
(run 21243 just)

The muon and Z-chamber are back in readout & checking programs (R21242→)

15⁵⁵ Dump job ran but no high priority computer time left to submit REFORM job.

16⁰⁰ McCorkindale & Krehbiel on shift

16.20. JDAS ERROR: Missing LAM branch 3 crate 2.
System crate watchdog flag.
Missing LAM branch 1 crate 1 } x4
Also several times Crate 6 Branch 4
} x284 Stopped by Pause/Continue.

17.00 Beams lost. Jackpot hit into JADE; all chambers tripped. Noise, flashlights etc.
Just for safety to (probably) cure errors: NORD reloaded and all processors loaded.

17.40 Short Break

19:00 VTX-HV set 1475 V (Run 21246)

19:40 Beams lost. (similar to 17.00 entry)

20.05 Beams up again. Sequence of errors from Miss LAM Muon Chamber on as before

20.20 Beam lost

20 45 NEW BEAMS - Run 21248 STARTED.
All CHAMBER TRIP. -

11.6.85

0⁰⁰ Kawagoe and Kleinwort on shift.

0¹⁵ Gas check done

0¹⁷ ALL CHAMBER TRIP

0²¹ Beams lost, "

1¹⁰ Reform Job submitted.

1⁵⁰ Vtx Ch. soft trip.

1⁵³ JDAS ERROR 33 Missing LAM branch 2 crate 4 TOF2 counters

2¹⁵ YSPY TRIGGER 2 output missing 145

3⁴² Nim (TOF) 0,8 V I₃ ≈ 6 mA), but short (0 sec) fill / run 21254

11/6/85

6⁰⁰ shift optimization : second ID soft trips (0,5 mA e⁻ lost)
6³⁷ JDAS ERROR 44 DMA TIME OUT branch 2 crate 1 : Latches pause/continue didn't help.
stop RUN and start new Run → ok.
7⁰² Utx Ch. soft trip.

8⁰⁰ F. Loebinger, E. Elsen
8⁰⁵ Chambers trip with partial beam loss
8¹⁰ Gas check done
8¹⁵ JDAS 33 br 4 cr 6 ID ring 2
8:35 Temperature warning: 19.6°C. Air condition people perform test on system and claim that temperature will go down soon.
9:00 JDASS 33 br 2 cr 3 : TOF1 counters
9:30 JDAS 46 MP 16 out of sequence.
9:38 " " " "
10:49 " 45 MP 16 analysis incomplete,
A LG-Fan is broken. Trying to find a spare ...
12:15 beam. We can't switch on.
13.30 The 2 spare fan units are themselves broken. Herr Masbender is trying to make a temporary arrangement but will not be ready for today. We have put working fan unit below both crates (rack 5 crates 3&4) in hope that (or an even more temporary barrier) it can give sufficient cooling for both crates to allow us to continue running
However no beams yet "Shat Break"
15:15 Magnet Control Unit has "Wackelkontakt"
do not attempt to run the magnet by computer for now. It may happen that the power supply will be run uncontrolled then!
The current/field reading is not affected. E. Elsen

18⁰⁰ A. Finch, Bessier on shift
18⁴⁰ The Fan in N-10 will be replaced tomorrow: If it stops rattling, check if it has stopped completely and make a note.

16³³ 'No Trigger' - Pause/continue cures it.
16⁴⁸ IBM busy for 49 sec

16·57 JDAS ERROR 46 MP-16 out of sequence
"WATCH DOG" error message: NOT IN MANUAL ← MILLS
FARMS = 000002 140 20 repeats at several hour intervals
17·14 Missing CAM board [note]: Beampipe counter - repeatedly
Stopped run - started new run - cured problem
↑ not meant to be - people generally don't read manuals - inexperience!
17·20 Beampipe & ID trip (soft) - Partial beam loss
17·23 DETANL says 'switch off HV' ~~Beam dumped~~
17·26 Beams dumped
18·33 SOFT TRIP I.D. & VERTEX CHAMBER
18·52 NO TRIGS (Pause-continue)
19·18 Beampipe chamber gas alarm Followed prescription on Page 5 of this logbook — it worked
19·24 " " " " " " " " " " " "
19·50 " " " " picture works
19·51 - N.B. Muon Crate 8 MISSING ON AND OFF ALL EVENING
20⁰⁸ Hellenbrand came & look at the new spike in SYNRAD histogram. He confirmed it is correlated with noisy wire in wire map.
20:38 SOFT ID TRIP & Beampipe trip
20·43 YSPY: JETC V345 FOR THESE OLDS NUMIT: 73 75 77 79 ⇒ HOLE IN WIRE MAP
RANG HELLENBRAND - he came and is investigating
Fuse in V34 crate was broken, crate for V34 Nr. 132 74.2, 75.2, 76.2 wires 576 ... 632
fuse M5 replaced by M3, which can stand less current than the previous one
problem may occur again

23²⁸ Everything trips (I.D, Z-chamber, B.R.chamber)
23³³ " " " " "
23³⁵ " " " " "

12.6.85 0⁰⁰ Andersen, Becker

0¹⁵ Gas check
1⁰⁰ JDAS error 45 : MP 16 analysis incompl.
1⁰⁵ I.D. + VTX Ch. trip
1³⁰ VTX Ch. gas alarm
1⁵³ JDAS err. 45 / 46
2⁰⁵ I.D + VTX Ch. + Z ch. trip

RUN	DATE	START	STOP	AT RUN START I⁺	AT RUN START I⁻	BEAM TIME (%)	TIME (sec)	RECORDS IN	RECORDS OUT	ALL x10⁶	T6 RET x10⁶	T1 Acc SUM	T2 Acc SUM	T1 BIT 2 ELEV 66eV	T2 BIT 17 LT·E_T ≥ 2TR
21262	11/6/85	16:11	16:54	6.11	6.16	19.7	2803	8001	3921	730	174	3769	5361	885	19
21263	"	17:00	17:13	5.11	5.34	15.5	755	2084	992	196	30	1054	1422	266	5
21264	"	17:16	17:20	4.89	5.11	15.7	237	665	317	61	10	350	432	81	4
21265	"	17:56	18:48	6.31	6.26	22.1	2667	8002	4203	693	153	3893	5344	1050	29
21266	"	18:48	19:24	5.33	5.12	20.5	2130	5984	3039	554	113	3017	3983	759	22
21267	"	19:25	~~19:55~~ 20:22	4.79	4.60	14.7	3050	8002	3763	793	116	4266	5418	1049	21
21268	"	20:23	21:10	4.09	3.62	13.2	2625	6170	2573	683	90	3430	4147	826	27
21269	"	21:44	22:31	6.05	5.82	17.1	2849	8002	4031	740	126	4075	5584	1058	22
21270	"	22:32	23:40	5.07	4.74	16.2	3235	8002	3797	841	136	4438	5648	1135	29
21271	"	~~23:40~~ 23:40	0:25	4.02	3.42	13.2	2639	5695	2530	686	91	3333	4054	812	14
21272	12.6.85	0:53	2:01	5.80	5.54	16.8	2823	8001	4011	761	127	4240	5380	1029	28
21273	"	2:02	3:09	4.49	4.39	13.6	3406	8002	3598	886	120	4648	5536	1149	22
21274	"	3:10	4:11	3.84	3.44	12.4	3683	8002	3447	958	119	4746	5635	1111	22
21275	"	4:12	4:39	3.40	3.03	12.0	1504	3233	1398	391	47	1936	2223	490	9
21276	"	5:26	5:47	5.76	5.69	16.1	812	2619	1290	237	38	1260	1848	287	10
21277	"	6:14	7:54	5.86	5.67	16.8	2842	8002	4047	739	124	4025	5676	1047	26
21278	"	7:35	7:54	4.41	4.22	16.7	1170	3341	1568	304	51	4011	2345	449	10
21279	"	8:13	9:04	4.08	3.85	15.6	2486	6308	2844	647	101	7731	4285	926	28
21280	"	13:09	14:05	5.23	~~4.78~~ 4.31	14.0	~~7711~~ 7732	~~7711~~	3549	816	114	4048	~~5712~~	1061	21
21281	"	14:08	14:41	4.67	3.95	14.5	1896	4816	2200	494	72	2542	3449	620	18
21282	"	16:56	17:46	5.92	5.59	16.0	~~3023~~ 3022	~~8002~~ 8001	3946	787	126	4021	5663	959	27
21283	"	17:53	18:46	4.62	4.85	12.8	2936	7058	3159	764	98	3898	4943	1005	19
21285	"	19:08	19:30	3.11	3.89	11.1	1231	2675	1124	320	36	1618	1924	373	3
21286	"	20:02	20:50	5.90	5.91	16.9	2882	8001	4106	750	127	4198	5574	1125	31
21287	"	20:50	21:41	5.00	4.86	16.0	3038	8002	3939	791	127	4409	5668	1183	26
21288	"	21:42	22:31	4.22	3.93	14.7	2926	7128	3421	762	112	3997	5024	1029	27
21289	"	23:02	23:55	5.86	5.99	19.1	2768	8002	4192	720	137	4101	5545	1099	31
21290	"	23:55	00:09	4.70	4.76	18.0	744	2311	1299	194	~~135~~ 135	1315	1457	317	12
21291	—	short													
21292	—	short													
21293	13/6/85	0:35	1:30	4.08	4.16	18.3	3346	8001	3962	~~870~~ 870	159	4512	5646	1180	29
21294	"	1:30	2:17	3.40	3.53	14.4	2765	6422	2947	720	104	3763	4575	925	22
21295 + 21296	very short runs.														

PROCESSORS ON/OFF N50	MIP	TOF	FHAM	<L> 10^{30} cm^{-2}	Bhabha SLdt nb^{-1}	SLdt EXP. ENERG	IBM/TAPE OUTPUT	At Run Start ID (pA)	At Run Start TOF (V)	ONLINE REJ SUM MIPAM T2 %	ONLINE REJ MIPAM to T1 AT2 %	Σ_{Bhabh}	MH	E_{BEAM}	Mag Field (kGAUS)	Remarks
ON	ON	ON	OFF	4.88	11.4	5778.05	IBM	1.5	0.8	32	53	129	3	21.800	4.837	
"	"	"	"	4.07	2.74	5780.79	"	1.4	0.65	38	55	31	0	21.800	4.835	
"	"	"	"	4.23	0.80	5781.59	"	1.2	0.60	40	56	9	1	21.800	4.837	Beams dumped
"	"	"	"	4.69	12.28	5793.87	"	1.5	0.9	36	50	139	3	21.800	4.836	
"	"	"	"	3.43	6.18	5800.05	"	1.2	0.74	35	52	70	1	21.800	4.836	premature
"	"	"	"	2.99	7.51	5807.56	"	1.1	0.64	39	55	85	0	21.802	4.835	
"	"	"	"	2.18	~~4.91~~ 4.91	5812.07	"	0.8	0.50	41	61	57	1	21.800	4.836	Beams dumped
ON	ON	ON	OFF	4.45	12.28	5824.35	IBM	1.4	0.80	40	52	139	5	21.800	4.834	
"	"	"	"	3.18	9.81	5834.16	"	1.2	0.66	45	55	111	4	21.802	4.834	
"	"	"	"	1.97	5.12	5839.28	"	0.8	0.50	48	58	58	0	21.800	4.834	beams dumped
"	"	"	"	3.84	10.07	5849.35	"	1.5	0.9	41	52	114	6	"	4834	
"	"	"	"	2.46	7.25	5856.60	"	1.0	0.6	46	57	82	0	21.802	4835	
"	"	"	"	1.94	5.83	5862.43	"	0.8	0.4	49	58	66	0	"	4834	
"	"	"	"	1.70	3.71	5866.14	"	0.7	0.5	48	59	42	1	21.800	4834	beams dumped
"	"	"	"	4.50	3.45	5869.59	"	1.4	0.8	37	54	39	0	21.802	4834	Beams lost.
"	"	"	"	3.75	10.78	5880.37	"	1.4	0.8	40	52	122	2	21.800	4334	
"	"	"	"	2.56	3.00	5883.37	"	1.4	0.8			30	0	"	"	IBM down
"	"	"	"	2.07	5.12	5888.49	"	1.2	0.75			58	0	"	"	beams lost
"	"	"	"	2.45	7.70	5896.19	"	~~1.4~~ 1.4	0.8	42	56	87	3	"	4835	
"	"	"	"	2.29	3.36	5899.45	"	1.0	0.5	43	57	38	2	"	"	beams lost
"	"	"	"	4.53	12.90	5912.35	"			39	53	146	1	"	4837	
"	"	"	"	2.64	6.72	5919.07	"	1.2	0.6	43	57	76	1	"	4835	run 21284 missing due to IBM tape error.
"	"	"	"	1.83	1.71	5920.84	"	"	"	49	60	20	0	"	4837	beams dumped
"	"	"	"	4.63	12.46	5933.30	"	1.4	0.8	41	51	141	2	"	4835	
"	"	"	"	3.06	7.69	5940.99	"	1.2	0.75	45	53	87	2	"	"	
"	"	"	"	2.24	5.48	5946.47	"	1.0	0.65	46	55	62	4	"	"	Beams dumped
"	"	"	"	4.16	12.37	5958.84	"	1.4	1.0	40	50	140	5	"	"	
"	"	"	"	3.22	2.03	5960.07	"	1.2	0.8	42	46	23	0	"	"	
"	"	"	"	2.02	8.48	5968.55	"	0.9	0.7	46	53	96	1	"	4836	
"	"	"	"	1.65	4.42	5972.97	"	0.8	0.5	49	56	50	2	21.802	4837	
								1.4	1.0							

12.6.85

2^43 JDAS err. 45/46/133
2^54 ASPL : T2 output missing : 67 143 163
3^01 " " " "
4^20 Z-ch. trip
4^30 ASPL : T2 output missing : 137
5^35 I.D. + VTX ch. trip
7^06 " " + Z-ch trip
7^24 " " " trip

8^00 Fehl + (missing schneeklöckl on shift)
8^15 IBM back
8^30 ID + Z chamber + VTX chamber trip
8^52 the rattling fan stopped completely
9^06 beams lost, short break, magnet → 3000 A
9^30 gas check done
11^00 Fans in N10 exchanged, all seems OK after power off
13^00 new fill ready, but high background, PKR claims makes no sense since TASSO magnet is off for about 10 min
13^15 VTX CH. soft trips, high current in VTX CH. = 70 μA, TOF 0,9 V, I_{ID} = 1,6 μA
VTX CH. high voltage reduced to 1400 V for background optimization
13^25 " back to 1475 V
14^07 ID hard trip, Z+VTX CH. trip
15^00 short break, magnet → 3000 A
15^50 injection magnet → 7500 A

16^00 P. Warming + S. Komamiya
17^30 The fan unit made by Herr Mosbacher is placed below the LG linear sum crate. K.K.
18^00 Soft ID+VTX trip
18^46 IBM link error → Phone to FS8 → no body was there
Phone to TASSO → they will reset the NORD computer which is used for the IBM link
Phone IBM, they say they have problems with one machine, will be ok in a few minutes
19^08 IBM back on

12/6/85

21:18 suddenly many missing LAMs br 2 cr 3 (TOF)
PAUSE/CONTINUE cured it.
about twice per rem trigger box hang up, cured by PAUSE/CONTINUE
and a few missing LAMs br 4 cr 6 (ID)

13/6/85 F. Loebinger + G. Kinkes

0.00 Vertex chamber trip.
0.10 a flood of missing LAM branch 3 (1) crate 2 (1) Huron (beampipe 1 chamber); over a period of ~ 20 min.
0.15 Gas check done.
Missing LAM br 3 cr 2 problem continues. Change in crate LAM grader seems somewhat better but still get occasional missing LAM.
Also interspersed with Missing LAM br 4 cr 6.
Notice that whilst LAM missing br 3 cr 2 almost always followed by
LAM missing br 1 cr 1,
occasionally get LAM missing br 1 cr 3 (Beampipe chamber) instead.
and sometimes get nothing (except watchdog flag).

Also still get quite a few JDAS error 45 MP-16 analysis incomplete.

02.00 On lineprinter get message: ERROR 37 IOX ERROR } Happened simultaneously with
ADDRESS: 103760, LEVEL (DEC.): 8 } LAM missing br 3 cr 2.
03.30 Huron crate missing LAM's traced to loose connection in rackback. Fixed & no further missing LAM br 3 cr 2 (at least for the next 4 hours — so far).
03^55 beams lost

05^40 many JDAS ERROR 33, Missing LAM branch 2 crate 3 — : TOF1 counters
5^45 branch 3 crate 4 Z chamber part 1

8:00 McCorkindale and Hellenbrand on shift
some problems as before with JDAS READOUT ERROR's
8:50 VTX, ID + T chamber trip
11:00 NO TRIGGER BITS — These errors are important!! Suspect same as on page 22.

RUN	DATE	START	STOP	AT RUN START I+	AT RUN START I-	DEAD TIME (%)	TIME (sec)	RECORDS IN	RECORDS OUT	ALL ×10⁶	TΦ REJ ×10⁶	T1 ACC SUM	T2 ACC SUM	T1 BIT 2 E_LG >6GeV	T2 BIT 17 2T. E_T ≥ 2Te
21297	13/6/85	3.31	3.54	4.85	5.01	17.3	1339	3709	1949	348	60	2015	2588	568	13
21298	"	4.30	5.15	6.05	6.10	19.5	2687	8002	4386	700	137	4003	5674	1042	26
21299	"	5.15	6.10	4.81	4.92	17.7	3008	8002	4132	782	139	4393	5632	1111	28
21300	"	6.10	7.06	3.77	3.80	13.3	3327	8001	3903	865	116	4643	5650	1119	36
21301	"	7.07	8.00	2.74	2.81	12.2	3181	6988	3190	828	101	4173	5122	997	28
21302	13/6/85	8.40	~~9.34~~ 9.39	~~4.38~~ 5.99	~~4.56~~ 5.64	20.2	3034	8001	4102	990	160	4235	5559	~~1254~~ 1108	24
21303	13/6/85	9.40	10.33	4.34	3.94	13.9	3196	8001	3823	832	116	4515	5523	1130	43
21304	13/6/85	10.34	11.42	3.75	3.38	13.6	3574	8001	3734	930	127	4718	5669	1082	31
21305	13/6/85	11.42	12.06	3.12	2.76	11.7	1417	3174	1448	369	43	1950	2174	422	16
21306	13/6/85	12.49	13.36	5.93	5.91	18.1	2786	8002	4336	709	129	4303	5498	1182	34
21307	13/6/85	13.36	14.24	4.82	4.76	17.0	2834	8002	4302	735	125	4393	5539	1182	19
21308	"	14.24	15.17	4.15	4.14	15.1	3179	8002	3982	827	125	4550	5623	1081	30
21309	"	15.18	16.15	3.51	3.53	12.7	3390	7538	3471	882	111	4477	5361	1012	27
21310	"	16.57	17.48	4.93	5.94	14.7	3039	8002	3818	790	116	4270	5547	980	36
21311	"	17.48	18.11	4.18	4.92	14.2	1358	3467	1591	353	50	1926	2349	434	10
21312	"	18.54	19.44	5.87	5.94	16.7	2790	8002	3977	725	120	4185	5494	1042	18
21313	"	19.44	20.33	4.95	5.11	15.1	2929	8002	3822	761	115	4479	5491	1128	20
21314	"	20.34	21.34	4.32	4.43	13.5	3272	8002	3636	851	115	4682	5519	1054	19
21315	"	21.34	21.53	3.73	3.84	12.9	1117	2591	1126	290	37	1553	1801	336	4
21316	"	22.24	23.14	5.91	6.01	16.5	2817	8002	3986	733	120	4154	5575	1026	30
21317	14.6.85	23.15	0.12	5.13	5.21	15.1	2802	7756	3765	729	110	4331	5289	1067	25
21318	"	0.55	1.46	5.93	5.98	16.0	2821	8002	3942	734	117	4318	5467	1061	19
21319	"	1.46	2.43	4.93	4.76	13.8	3164	8001	3783	823	173	4592	5445	1090	29
21320	"	2.43	3.47	4.22	3.85	13.0	3444	8002	3469	896	116	4732	5430	1030	10
21321	"	3.48	4.15	3.68	3.03	11.6	1597	3541	1465	416	45	2195	2387	497	7
21322	"	4.50	5.54	5,40	3,81	14.8	3178	8002	3856	705	122	4421	5584	1060	21
21323	"	5.54	6.15	4.44	3,14	13.2	1240	3191	1471	280	43	1867	2152	429	7
21324	"	6.45	7.02	4.36	2.72	12.8	1033	2553	1146	269	34	1443	1734	343	5
21325	"	7.42	8.37	5.79	5.46	17.5	2775	8001	4126	732	126	4191	5493	1012	32
21326	"	8.38	9.27	4.75	4.18	16.9	2936	8001	4114	764	129	4490	5604	1142	29
21327	"	9.27	10.18	4.65	3.61	14.4	3022	8002	3978	786	113	4626	5512	1105	27
21328	"	10.18	10.31	3.47	3.11	13.9	562	1534	721	147	20	910	1000	217	5

PROCESSORS ON/OFF NSO	MIP	TOF	FAMP	<L> 10^{30} cm^{-2}s^{-1}	Bhabha $\int L\,dt$ nb^{-1}	$\int L\,dt$ EXP. ENERGY	IBM/TAPE OUTPUT	AT RUN START ID (μA)	AT RUN START TOF (V)	ONLINE REJ SUM MIPROC T_0 (%)	ONLINE REJ NOISE+TO T.RT. (%)	Σ Bhabha	M.H	E_{BEAM}	MAG. FIELD % OF CANC	REMARKS
ON	ON	ON	OFF	3.16	4.77	5977.74	IBM	1.4	1.0	44	50	54	1	21.800	4835	
"	"	"	"	4.41	~~9.72~~ ~~4.87~~	~~5984.58~~ 5987.46	"	1.4	1.0	40	48	110	2	"	"	
"	"	"	"	2.68	8.22	5995.68	"	1.2	0.9	44	51	93	2	"	"	
"	"	"	"	1.94	6.27	6001.95	"	0.8	0.7	48	53	71	2	21.802	4836	
"	"	"	"	1.45	4.42	6006.37	"	0.6	0.5	51	57	50	3	21.802	4834	beams dumped
"	"	"	"	3.35	10.42	6016.79	"	1.5	0.9	41	51	118	2	21.800	4836	~~beams~~
"	"	"	"	2.52	8.04	6024 6030 6024.83	"	1.3	0.7	45	55	91	5	21.800	4837	
"	"	"	"	1.81	5.96	6030 6030.57	"	0.8	0.5	49	55	65	1	21.802	4837	
"	"	"	"	1.53	2.30	6030 6032 87	"	0.6	0.5	51	57	26	0	21.800	4838	beams dumped
"	"	"	"	4.26	9.89	6042.76	"	1.3	1.0	42	48	112	2	21.800	4837	
"	"	"	"	3.23	10.16	6052.92	"	1.0	0.9	44	49	115	3	21.800	4838	
"	"	"	"	2.52	6.89	6061.81	"	0.9	1.5	47	53	78	2	"	4837	
"	"	"	"	1.92	6.10	6067.91	"	0.9	0.6	50	56	69	1	"	4838	beams dumped
"	"	"	"	3.62	11.22	6079.13	"	1.2	0.8	42	55	127	0	"	4838	
"	"	"	"	2.27	2.65	6081.78	"	1.1	0.7	44	57	30	1	"	4838	beams lost.
"	"	"	"	3.67	10.51	6092.29	"	1.4	0.85	41	53	119	3	"	4838	
"	"	"	"	2.90	8.85	6101.12	"	1.2	0.75	45	55	100	1	"	4838	
"	"	"	"	2.14	6.18	6107.30	"	1.0	.75	48	57	70	3	"	4837	
"	"	"	"	1.72	1.59	6108.89	"	0.9	0.7	50	59	18	0	"	4837	beams dumped
"	"	"	"	4.02	10.96	6119.85	"	1.4	0.9	40	52	124	5	"	4838	
"	"	"	"	3.29	9.72	6129.57	"	1.2	0.8	45	54	110	1	"	4838	beam lost
"	"	"	"	4.41	10.60	6140.17	"	1.6	1.0	42	53	120	2	"	4837	
"	"	"	"	2.88	7.69	6147.86	"	1.0	0.7	45	55	87	2	"	4838	
"	"	"	"	1.98	6.98	6154.84	"	1.0	0.7	48	59	79	1	"	4837	
"	"	"	"	1.66	2.56	6157.40	"	0.7	0.5	50	61	29	0	"	4838	beams dumped
"	"	"	"	3.02	8.83	6166.23	"	1.4	1.0	44	54	100	1	"	4838	
"	"	"	"	2.40	2.65	6168.88	"	1.0	0.8	46	56	30	0	"	4836	1B17 down
"	"	"	"	1.71	0.97	6178.35	"	0.8	0.7	46	57	11	0	"	4836	beams dumped
"	"	"	"	3.58	9.72	6188.57	"	1.4	1.0	42	51	110	3	21.802	4837	
"	"	"	"	2.49	7.07	6195.64	"	1.0	1.0	43	51	80	0	21.802	4838	
"	"	"	"	1.89	6.18	6201.82	"	1.0	0.85	47	53	70	1	21.800	4837	
"	"	"	"	1.20	0.62	6202.44	"	0.8		48%	56%	7	0	21.802	4838	beams dumped

16⁰⁰ A FINCH (FOR I. QUERMOTH) & MAGNUSSEN ON SHIFT 16³³: IPD takes over.
16⁵⁰ new fill & run. We got NOTRIGGER BITS flash up now & then. H.M. says its when the event is caused by the coplanar trigger & no other, because trigger data for that trigger is missing. It effects the analysis only of events with this trigger. Kreuberl is checking it. (see notes p 37_22).

16⁰⁰ GAS CHECK DONE.
23²² VTCH hard trip 2x Q3

14.6.85

0:00 Raudies, Dudenaun on shift. 0:30 Gas check done
JOBS ERRORS: 33/45/52
3:39 Trigger T2 OUTPUT MISSING 146
4:05 " " 46 143 163
5:37 IBM ERROR 54 - NO IBM LINK - Call an operator - restart in 5min!
5:45 IBM o.k.
6:17 IBM ERROR 54 again ; IBM operator: IBM down for ≈ 30min
6:45 IBM up Run 21324 started
6⁰⁰ Olsson, McCorkindale Trigger bits missing occur sometimes (Krebbiel!) ~ 3-4% of all
This is again the wide coplanar telygon, but no big effect in Trigger bit history
8²⁵ All chambers tripped
9:25 Missing LAM branch3 ~ seven chambers
Watchdog.

11 45 To cure Missing Lam in B4C6 I cleaned all DL8's of this crate. I doubt that it helps.
Missing wire # 149 is a fault in the V34 module and cannot be repaired at the moment Rdy

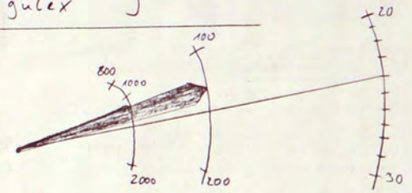
15⁵⁵ p4 ethane gas pressure: 18 Loose contact in trigger logic found, however
16⁰⁰ Meinke, Weber seems gone! J.O. / M.K.
16⁴³ Gas Check o.k.
17¹⁵ time in sec and <L> 2xx found to be wrong by a factor of 10
cable on trigger box was in wrong position, we have stopped run 21330 for this xxx
20²⁰ operator console was blocked → NORD rebooted

In case of V I X C - GASALARM

1) go to the RUCKSACK
2) look at the VTXC - ERRORBOX
3) possible errors shows red lamp on the left side of box
   - A) pressure wrong } see below
   - B) valve failure }
   - C) overtemperature } call expert
   - D) power fail regulation }
   - E) power fail gulex }

RUCKSACK

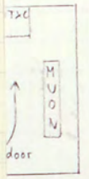
A) pressure wrong
1) read P14

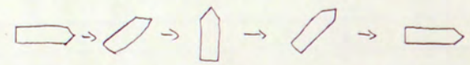


≡ 1124 mbar

GASHAUS

I) pressure < 1115 mbar
read F1: black ball should be around 8.0
read F2: α) PC5 green lamp on ⇒ F2 black ball 8.5
β) PC5 red lamp on ⇒ F2 black ball 7.5
if F1 and F2 readings o.k. (otherwise call expert)
⇒ turn V5





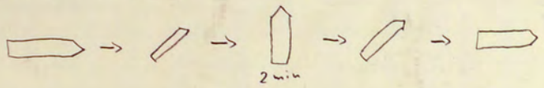
pressure wrong alarm should stop after 2 min
(IBM PC quiet)

A) ~~pressure wrong~~ continuation

II) pressure > 1150 mbar

F1 and F2 readings o.k.? (see A1a)

⇒ turn V3



pressure wrong alarm should stop after 2 min (IBM PC quiet)

B) valve failure

at top of rack — Betrieb ○ should be always green — Störung ○ red lamp on means valve failure

GASHAUS

to reset error:

PC 5:

α) if lamp inside red button is on



⇒ press on green button for 1 sec

⇒ lamp inside red button goes off, inside green button on

⇒ Störung red lamp off (if not see ①)

β) if lamp inside green button is on

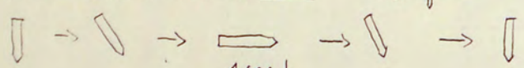


⇒ press on red button for 1sec

⇒ lamp inside green button goes off, inside red button on

⇒ Störung red lamp off (if not see ②)

① turn valve next to P14 — P14 ○ ▯ valve



⇒ Störung red lamp should then be off

If nothing helps call expert

I find no PC5 → in the gashaus

ask your dog

If you find it

← which green button? (make clear that "AUF" is a button and not just a lamp)

See Page 5 of this book

15. 6. 85

0:00 Finch Matsumura on shift

0:20 Gas check done

1:10 PETRA BACKGROUND goes crazy - a magnet problem. After background optimization it's ok (TOF)

1:42 " " " " " " " " (At times background > 10V)

1:52 MARK3 ring - PKR wants new fill! It can't be worse than present one! ($I^- = 2.2$ $I^+ = 4.5$!)

02:03 Reform job submitted

04:29 Vtx chamber trip

06:47 Vtx chamber gas alarm - ~~Gas~~ Valve failure case ⑦ - followed procedure on appropriate page

8:00 Kawagoe & Krehbiel on shift

8:10 Gas Check Done

8:26 Beams ready, RUN start.

8:38 Vtx Ch. Soft trip. Also sometimes μ Crate 8 missing, curable by pressing red button

8:45 another Vtx Ch. soft trip

Run 21343 Several JOAS-ERRS; The sequence 33 Mu-Ch / 53 Wait Rdy / 33 Miss LAM Cr. 4 Br. 7 } 2 times

9.05 VtxC Soft trip

Also Miss LAM B 4 C 6

9:20 one of the LG HV channels was found uncontrollable (always at the Max. Voltage ~1.96 kV). this might be due to the broken HV channel, so the HV cable was moved to the other channel. → OK.

9:35 VTCH + JETC Soft trip Miss-LAM Muon - Error sequence

Background conditions worse! ToF rate 1.25 V ~~0~~ 2x 4.9 mA;

They say they want to optimize the Luminosity

Beam lifetimes ungood, around 5 hrs instead of 7

11:45 Suddenly a change in the JOAS Error Menu: Missing LAM Br. 6 Crate 3

every event. The conversion LED in the leftmost DL8 stayed permanently on.

The HV-on-call could not be reached. After some trials to find someone I spotted Hellen Brand in his home. With his telefonic aid I exchanged a DL-8.

Removed No 11; Put in No 18 (Numbers twice in front and once on rear panel)

In Crate 3 Branch 6, Leftmost DL-8

12:00 Beams dumped. 12:30 Beams up again. Shortly after HV up VTCH hard trip. Hard trips continue at attempts to run the HV up. After some trips (5 ±) We decided to take it out of the readout pattern. Readout Pattern Set to 77735 B.

Note also high JETC current: almost 30 μA

RUN	DATE	START	STOP	AT RUN START I^+	AT RUN START I^-	DEAD TIME (%)	TIME (sec)	Records IN	Records OUT	ALL $\times 10^6$	T_0 REJ $\times 10^6$	T_1 ACC SUM	T_2 ACC SUM	T_1 Bit2 $E_{cal} > 6GeV$	T_2 Bit 17 $2T \cdot E_T \geq 2TR$
21329	14/6/85	16:16	17:03	4.34	4.81	17.7	2133	8002	4617	727.	129	4503	5547	981	9
21330	"	17:04	17:15	3.75	4.24	14.8	649	1770	959	169	25	1017	1114	209	2
21331	"	17:15	18:11	3.16	4.13	13.0	3310	8007	3993	861	112	4715	5716	1128	15
21332	"	18:11	18:58	3.15	3.61	13.3	2796	6730	3208	727	97	3992	4649	922	9
21334	"	20:28	21:15	4.28	4.50	19.3	2810	8001	4352	731	141	4510	5382	1118	41
21335	"	21:15	22:05	3.63	3.84	15.3	2913	8002	4238	758	116	4679	5413	1131	33
21336	"	22:09	23:00	3.08	3.27	13.6	2956	7675	3822	769	104	4733	5005	1117	34
21337	15.6.85	0:37	1:10	4.98	3.55	13.0	1890	4393	2161	492	64	2433	3158	487	16
21338	"	1:22	1:54	4.50	3.10	14.0	1933	3771	1864	373	52	2102	2506	437	15
21339	"	2:31	3:16	5.46	5.80	18.8	2630	8002	4443	684	124	4243	5293	1031	27
21340	"	3:15	4:02	4.68	5.02	18.6	2739	8001	4403	712	128	4417	5325	1096	31
21341	"	4:03	4:54	3.99	4.31	15.1	2929	8002	4221	762	115	4598	5472	1067	33
21342	"	4:55	5:09	3.38	3.66	15.5	815	2326	1184	212	33	1350	1465	309	12
21343	"	8:26	9:13	5.99	6.07	17.2	2755	8001	4218	717	123	4156	5440	906	25
21344	"	9:24	10:12	5.00	5.15	21.2	2656	8002	4562	692	146	4209	5586	1094	26
21345	"	10:13	10:56	4.30	3.79	21.7	2579	8001	4570	671	146	4366	5399	1734	40
21346	"	10:56	11:30	3.79	3.95	17.6	1953	5132	2540	508	89	2903	3357	621	17
21347	"	11:58	12:01	3.19	3.35	12.4	102	384	177	27	3	216	164	28	1
21348	"	12:41	12:52	5.61	5.67	31.3	603	1858	947	157	49	792	2136	399	10
21349	"	12:53	13:39	5.39	5.46	19.4	2653	8001	4401	609	134	4322	5428	1093	32
21350	"	13:38	14:27	4.67	4.75	16.1	2857	8002	4774	743	120	4414	5427	1079	31
21351	"	14:27	14:46	4.07	4.15	14.2	1061	2769	1345	276	39	1648	1786	385	12
21352	"	17:09	18:13	5.00	4.74	18.8	2961	8002	3737	770	145	4001	5312	915	21
21353	"	18:14	19:08	4.24	3.98	13.4	2600	6680	2984	676	91	3720	4340	772	13
21354	"	19:38	20:55	5.91	6.01	19.3	2667	8002	4303	694	134	4261	5151	1014	26
21355	"	20:55	21:48	4.54	4.44	16.9	2846	8002	4268	741	125	4562	5415	1122	20
21356	"	21:49	22:13	3.88	3.81	12.4	1174	3134	1583	305	40	1841	2141	435	19
21357	"	22:44	23:33	5.94	5.90	15.0	2569	8002	4304	669	100	4412	5666	1153	24
21358	"	23:33	0:19	5.08	5.08	15.2	2643	8002	4403	688	105	4353	5438	1091	32
21359	16.6.85	0:20	1:08	4.37	4.38	17.1	2855	8002	4320	743	127	4663	5462	1124	37
21360	"	1:07	1:38	3.74	3.75	15.4	1615	4465	2244	420	65	2636	2979	612	21
21361	"	2:23	3:11	5.79	5.73	23.2	2471	8002	4780	643	149	4339	5358	1110	43
21362	"	3:12	3:55	4.85	4.50	20.9	2584	8001	4616	672	141	4566	5408	1178	31
21363	"	3:56	4:44	4.16	3.86	15.4	2844	8002	16316	757	117	4783	9542	1131	31

PROCESSOR ON/OFF N50	MIP	TOF	FAMP	$\langle L \rangle$ 10^{30} cm^{-2}s^{-1}	Bhabha $\int dt$ nb^{-1}	$\int L\,dt$ EXP. ENERGY	IBM/TAPE OUTPUT	At Run Start ID (μA)	At Run Start TOF (V)	ONLINE REJ SUM MIPROC T_2 %	ONLINE REJ NORD-50 T, BT_2 %	ΣBhabha	MH	Ecocam	Mag. Field -1.6Gauss	Remarks
on	on	on	off	2.7	9.19	6211.63	IBM	1.0	0.65	46	44	104	2	21.802	4.844	
"	"	"	"	2.2	.88	6212.51	"	"	"	42	48	10	0	"	4.841	time in sec wrong on run summary → run stopped
"	"	"	"	2.1	7.51	6220.02	"	0.8	0.6	49	52	85	1	"	4.840	
"	"	"	"	1.7	4.15	6224.17	"	"	"	48	54	47	1	"	4.841	Stop for refill
"	"	"	"	2.58	6.18	6232.35	"	.9	.9	46	48	70	2	"	4.841	
"	"	"	"	2.07	7.02	6239.42	"	.8	.8	42	49	80	1	"	4.840	
"	"	"	"	1.44	3.98	6243.40	"	.7	.7	49	52	45	2	21800	4840	
"	"	"	"	2.74	5.92	6249.32	"	0.9	0.7	46	53	67	0	21802	4838	
"	"	"	"	2.00	2.03	6251.35	"	0.8	0.7	43	53	23	1	"	4839	Beams lost
"	"	"	"	4.44	10.69	6262.04	"	1.3	1.2	41	47	121	3	"	4838	
"	"	"	"	3.20	7.86	6269.90	"	1.1	0.99	43	47	89	0	"	4838	
"	"	"	"	2.28	6.45	6276.35	"	1.0	0.88	47	50	73	0	"	4839	
"	"	"	"	1.81	1.41	6277.76	"	0.8	0.78	45	52	16	0	"	4838	Beam lost
"	"	"	"	3.65	9.19	6286.95	"	1.3	1.2	40	50	104	2	"	4840	
"	"	"	"	2.79	6.54	6293.49	"	1.2	1.1	44	46	74	3	21800	4841	
"	"	"	"	2.03	5.65	6299.14	"	1.1	1.6	45	45	64	3	802	4.839	
"	"	"	"	1.67	2.47	6301.61	"	1.0	0.8	44	53	28	0	21.800	4838	
"	"	"	"	1.23	0.18	6301.79	"	?	?	15	57	2	0	"	4840	Beams dumped.
"	"	"	"	2.64	1.68	6303.47	"	2.3	1.25	53	50	19	0	"	4838	Without VTXC
"	"	"	"	3.22	9.28	6312.75	"	1.3	1.20	43	47	105	2	21.802	4839	with VTXC ↓
"	"	"	"	2.70	6.80	6319.55	"	1.15	0.86	45	51	78	3	21.802	4840	
"	"	"	"	2.15	3.36	6322.91	"	1.0	0.7	47	53	38	1	21.800	4840	Beams half lost, half dumped
"	"	"	"	2.89	8.13	6331.04	"	1.6	.65	36	56	92	2	21.800	4844	
"	"	"	"	2.28	6.18	6337.22	"	1.4	.6	42	58	70	3	21.800	4844	Beams dumped
"	"	"	"	3.98	9.28	6346.50	"	1.4	1.0	39	49	105	4	21.800	4835	
"	"	"	"	2.78	7.51	6354.01	"	1.1	.95	41	49	85	5	21.800	4834	
"	"	"	"	2.62	2.21	6356.22	"	0.9	0.8	47	51	25	0	21.800	4834	Beams Dumped.
"	"	"	"	4.56	10.78	6367.00	"	1.4	1.2	41	47	122	5	21.800	4834	
"	"	"	"	3.78	9.81	6376.81	"	1.0	1.0	45	47	111	2	21.800	4834	VTXC → 1400V
"	"	"	"	2.63	6.80	6383.60	"	1.0	0.9	46	48	77	4	"	4835	
"	"	"	"	1.98	3.18	6386.78	"	0.8	0.8	46	51	36	3	"	4834	beams dumped
"	"	"	"	4.15	7.78	6394.56	"	1.3	1.25 bis 1.4	42	43	88	3	21.802	4834	
"	"	"	"	3.01	6.27	6400.83	"	1.1	1.25	45	44	71	3	21.802	4834	
"	"	"	"	2.31	6.63	6407.46	"	1.0	1.0	48	48	75	1	21.800	4834	

15.6. In spite of removing vom Readout Pattern YSPY still checks the VTCH
We connected the JETC Current to PKR. After a telef. request, they really managed to bring it down from 30 to 14 μA. However this had little influence on TOF rate. Now the VTCH is able to return.
We stop the run and put it back into readout pattern.

13.05 VTXC soft trips. This time alarms all around and no way to reset them! No questions about Run stop asked. What a nuisance!

YSPY: There seems to be a problem in T2-Trackfinder. There is one low (not empty) bin in T2 Input, No corresponding irregularity in JETC Histograms. The 68 th bin.

14.45 JETC soft + VTCH Hard trip. Beams getting lost slowly. "Transmitter failure"

15.45 Magnet trip. Error Message "Ø Vorratsbehälter oberes Niveau <". Called 33.89.
They promise to care.

16" Duerdoth Hengelmann Magnet being repaired. Will have to change ethan supply this shift.

17.05 Magnet ready

17:45 The bell of the phone was switched off (WS pushed down). Since when?

18:05 VTXC and fetch alarm

18:45 Äthan bottels changed.

Tentatively Card exchanged
Front input signals checked at T2 logics. Nothing found, Gap still there
Cannot do anything without taking things apart - Kuck

Several
~ 20.01 VTX chamber trips. less frequent as fill progressed.

21:40 Dips in Histogram "Trigger 2 Output" attacked. In Rack 77, lowest T2 Eurocrate switch FPLA-Card exchanged. Seems to have cured the problem.

22.40 New fill — Vertex chamber stays ON only for a minute at a time.

~23.00 Stays on for only a few seconds

23:45 Vertexchamber HT lowered from 1475 → 1400 V. Petersen will come in tomorrow morning.

16:6:85

0.00 Eichner blatt & Middleton.

0.20 gas check done.

1.22 Z chamber tripped — reset at 2nd attempt (HT trip).

1.00 JET Chamber, wire map, mean hits/wire, mean ADC: no entries for wire #149, dead?

6.56 JET, VTX, + Z Chamber hard trip

8.00 R. G. Glasser and H. Rieseberg on shift.

8.15 Gas dock done

8.25 New fill ready, Start Run 21368

8.30 TOF rate goes up from 1.3 to 2.8 and stays at ~ 1.5 → dead time ~ 30%
Complain at PKR, Beam steering gives no improvement
Beam life time ~ 5 hours

9.40 VTXC Valve failure

9.50 Beam loss

10.36 Gas Trip

11:43 Tried to raise B Pipe chamber voltage trip twice

11.50 VTXC HT 1475 → 1400 V.

Only beginning of Run 21375 is with 1475 V. (With 1400 V only syn. rad hits are visible)
P. Petersen will come in soon.

12:05 Trying to raise Vertex ch voltage. PAUSE but chamber trips at 1475 not at 1400 see Picture 21372-3123

12:10 Back to 1400 can't hold it

12.40 VTXC: P. Petersen increases threshold of Q3 for soft trip. Run # 21373 with 1475 V.

At start of Run # 21372 (started at 11:43) and at start of Run # 21373 (started at 12:42)
IBM information links not available.
We have to type in currents and energy. → not update of this data and SL...
IBM JADE DISC N/A
We call J. Olsson (to DESY) and Herrn Delfs. Herr Delfs will come today. Tasso's link is ok.

~ 15 h Herr Delfs comes to the F58 room and makes some test. After some fiddles it works again! - May be that the fault was on our side. Probably one has to reinstall the link after use for program transfer!

15.20 Beams dumped.

15.45 Beams ready.

15.51 Run 21377 started, FAMP on (PATHOS 5 = new bit routines, slave 1 CPU exchanged)

1600 Hedgcock & Lauschmann on shift

High currents in vertex chamber and deadtime during long extinguation.

16.25 VTXC VALVE FAILURE. - SEVERAL SOFT TRIPS ON VERTEX.
JDAS ERROR 45 MP16 ANALYSIS INCOMPLETE YY = 1 (HHH !
IBM TRANSFER ERROR — IBM BUSY FAIRLY REGULARLY.

18.00 - WE ASK FOR NEW FILL - BEAMS DUMPED — INJECTION — SHORT BREAK - 18.25

19.00 JDAS ERR. 33 MISSING CAM OR. 4 CR. 6 (WAS 3 MORE TIMES EARLIER ON OUR SHIFT)

19.15 " Various places (LG, TOF) PAUSE/CONTINUE helped

ID — IN ADDITION TO WIRE 144; WIRE NO 510 NOW APPEARS TO BE ON CONTINUOUSLY (RINGING)
SEE HISTOGRAMS FOR RUN 21378 RUN 21380

No remedy at the moment, Reg

72.50 ALL DETECTORS TRIP

RUN	DATE	START	STOP	AT RUN START I^+	AT RUN START I^-	DEAD TIME (%)	TIME (SEC)	RECORDS IN	RECORDS OUT	ALL $*10^6$	TΦ REJ $*10^6$	T_1 ACC SUM	T_2 ACC SUM	T_1 BIT 2 EL. 76 GEV	T_2 BIT 17 2T.E.L.-2/2TR
21364	16/6/85	4:45	5:13	3.57	3.30	14.8	1625	4203	2161	422	62	2520	2779	558	11
21365	"	~~5:54~~ 6:31	~~7:62~~	5.76	5.62	27.0	2688	~~8002~~	4617	700	189	4293	5455	1103	29
21366	"	6:40	7:34	4.92	4.81	23.7	2722	8001	4585	708	168	4455	5461	1137	35
21367	"	~~7:35~~	7:54	3.34	3.18	14.8	1152	3140	1571	300	44	1854	2168	440	9
21368	"	8:27	9:10	6.01	5.92	29.7	2542	8002	4805	661	187	~~4108~~	5437	1095	29
21369	"	9:11	~~1939~~	5.17	5.13	22.2	2690	8001	4496	674	149	4221	5505	1135	48
21370	"	9:55	~~1039~~	4.44	4.41	20.0	2625	8002	4453	683	136	4495	5257	1127	22
21371	"	1044	1047	3.75	3.75	14.3	300	925	504	78	65	512	346	113	4
21372	"	11:43	12:38	5.91	5.79	22.6	2598	8002	4552	676	153	4199	5540	1019	32
21373	"	12:43	13:24	4.88	4.78	21.9	2472	8002	4652	643	140	4371	5588	1142	32
21374	"	13:26	14:10	4.20	4.11	19.7	2589	8001	4600	674	133	4566	5350	1180	40
21375	"	14:12	15:03	3.57	3.51	16.9	2860	8002	4393	743	125	4695	5426	1093	24
21376	"	15:04	15:18	3.01	2.96	20.9	820	2000	1068	213	44	1168	1332	246	6
21377	"	15:52	17:05	5.59	5.68	33.8	2700	8001	4774	702	237	~~4171~~	5236	1044	31
21378	"	17:07	17:55	4.20	4.31	19.9	2853	8002	4366	744	148	4397	5442	1031	22
21379	"	17:55	18:11	3.54	3.65	18.2	905	2459	1283	236	43	1353	1664	330	11
21380	"	18:57	19:45	5.26	4.88	28.2	2761	8002	4402	718	203	4107	5416	1018	17
21381	"	19:45	20:33	4.37	4.05	22.1	2846	8002	4213	741	163	4299	5306	1034	35
21382	"	20:33	21:27	3.64	3.38	16.1	3082	8002	4111	789	127	4512	5537	1023	25
21383	"	21:28	21:44	3.02	2.81	14.0	933	2429	1202	243	34	1366	1588	274	11
21384	"	22:35	23:26	5.49	5.64	30.8	2747	8002	4733	714	494	4285	5212	1108	38
21385	"	23:26	0:16	4.47	3.95	18.6	2894	8002	4420	753	140	~~4634~~ ~~5574~~ 3593	5302	1067	29
21386	17.6.85	0:17	0:58	3.77	3.33	15.3	2406	6110	3090	626	86	~~6770~~ ~~7755~~ 4160	4160	810	24
21387	"	1:45	2:41	5.77	5.86	30.1	2776	8002	4686	706	212	~~5470~~ 5273	5273	1074	27
21388	"	2:41	3:25	4.71	4.60	27.2	2607	8002	4852	679	184	4657	4946	1001	39
21389	"	3:26	4:16	4.02	3.93	18.2	2991	8002	4226	778	141	4679	5398	1031	26
21390	"	4:16	5:09	3.42	3.35	14.9	3189	8002	3892	830	124	4819	5353	1037	30
21391	"	5:10	5:14	2.92	2.86	12.1	216	575	294	56	6.8	350	324	77	0
21392	"	5:46	6:35	5.57	4.31	22.6	2826	8002	4505	736	166	4384	5378	1072	44
21393	"	6:35	7:24	4.80	3.67	22.4	2834	8002	4447	752	168	4511	5345	1057	18
21394	"	7:24	7:58	4.11	3.12	16.3	2027	5478	2882	527	85	3163	3657	708	17
21395	"	9:10	9:53	4.60	4.39	18.2	2950	8002	4456	767	140	4438	5527	1000	35
21396	"	10:01	10:51	3.96	3.77	16.6	2823	8001	4392	735	122	4678	5415	1099	33
21397	"	10:52	11:36	3.37	3.22	14.9	2594	7002	3725	635	101	4060	4792	913	24

PROCESSORS ON/OFF NSO	MIP	TOF	FAMP	<L>	BHABHA $\int L\,dt$ nb^{-1}	$\int L\,dt$ EXP. ENERGY	IBM/TAPE OUTPUT	AT RUN START ID (cm)	AT RUN START TOF (V)	ONLINE REJ. SUM MIRAC T_2 %	ONLINE REJ. NORD-50 T_2 & T_2 %	Σ_{events}	MH	E_{beam}	MAG. FIELD -1 x GAUSS	REMARKS.
ON	ON	ON	OFF	1.74	2.21	6409.67	IBM	0.8	0.8	47	51	25	1	21.802	4834	beams dumped.
"	"	"	"	4.13	9.54	6419.21	"	1.3	1.15	41	44	108	2	"	4835	
"	"	"	"	2.85	7.72	6426.98	"	1.2	1.2	43	45	88	1	"	"	
"	"	"	"	1.60	2.66	6429.64	"	0.7	0.8	46	52	30	0	"	4834	
"	"	"	OFF	3.64	7.24	6436.88	"	1.4	1.3	40	42	82	6	21.8	4835	
"	"	"	"	2.95	8.10	6445.98	"	1.3	1.3	41	46	103	3	21.8	4835	Petra information came down
"	"	"	"	2.45	5.92	6451.80	1'	1.2	1.2	43	47	67	0	21.8	4834	~~beam lost~~
"	"	"	"	2.16	0.53	6452.43	"	1.0	1.0		48	50	0	21.8	4837	beam lost
"	"	"	"	3.74	7.51	6459.94	"	1.4	1.6	40	45	85	1	21.800	4837	VTXC HT varying between 1400 and 1475
"	"	"	"	2.59	7.16	6467.10	"	1.2	1.2	43	44	81	2	21.800	4837	VTXC-HT: 1475V again
"	"	"	"	2.35	6.18	6473.28	"	1.1	1.8	46	45	70	4	21.800	4838	
"	"	"	"	1.76	4.42	6477.70	"	0.8	0.9	48	47	50	1	21.801	4838	Petra dark working ?
"	"	"	"	1.30	1.24	6478.94	"	0.6	3.8	49	50	14	1	21.802	4840	Beam dumped
"	"	"	ON	3.00	7.42	6486.36	"	1.4	1.4	41	43	84	1	21.800	4839	high deadtime & workstation crash
"	"	"	"	1.05	3.98	6490.34	"	1.1	1.0	45	49	45	3	—"—	4840	
"	"	"	"	0.71	0.35	6490.69	"	0.9	0.8	46	51	4	0	—"—	4840	BEAMS DUMPED.
"	"	"	"	2.71	8.48	6499.17	"	1.6	1.3	40	47	96	2	"	4838	
"	"	"	"	2.00	6.98	6506.15	"	1.15	1.05	41	50	79	0	"	4838	
"	"	"	"	1.53	3.18	6507.33	"	1.00	0.9	47	51	36	3	21.800	4837	
"	"	"	"	0.97	0.44	6507.77	"	0.9	0.8	44	53	5	0	—"—	—"—	
"	"	"	"	2.77	8.75	6516.52	"	1.35	1.2	42	43	99	4	21.800	4835	
"	"	"	"	2.20	6.38	6522.90	"	1.0	0.9	47	47	74	3	"	"	
"	"	"	"	1.71	3.71	6526.61	"	0.8	0.8	47	56	42	1	"	4841	Beams dumped
"	"	"	"	3.69	10.02	6536.63	"	1.35	1.3	48	44	108	3	"	4841	
"	"	"	"	2.81	5.92	6542.55	"	1.10	1.2	43	41	67	2	"	4840	
"	"	"	"	2.01	4.86	6547.41	"	0.9	1.0	47	50	55	3	"	"	
"	"	"	"	1.54	4.68	6552.09	"	0.75	0.75	48	50	53	3	"	"	
"	"	"	"	1.31	0.53	6552.61	"	-	-	47	53	6	0	"	"	beams dumped
"	"	"	"	3.07	7.77	6560.38	"	1.1	1.0	44	46	88	1	"	4841	
"	"	"	"	2.24	6.54	6566.92	"	1.0	0.95	44	47	74	2	"	4840	
"	"	"	"	1.80	3.98	6570.90	"	0.80	0.80	51	50	45	0	"	"	
"	"	"	OFF	2.85	8.13	6579.03	"	1.0	0.8	45	47	92	1	"	4840	
"	"	"	"	2.06	5.39	6584.42	"	0.9	0.9	48	47	61	1	"	4841	
"	"	"	"	1.61	3.18	6587.60	"	0.8	0.8	47	49	36	0	"	4841	beams dumped

17.6.85

00⁰¹ Warming, Fest on shift
gas check OK
01⁰⁰ magnet motor down to 7300 A, doesn't react on raise and lower, pushing reset/initiate for a short while makes it behave normally

PKR says that TASSO is off at least since Friday
02¹⁰ beam pipe and ID tripped + z chambers
02¹⁶ " " "
03⁰⁰ reform job submitted
03¹⁰ IBM transfer error 000052 suberror 000000, restart link successful
during all night every now and then JDAS error 33, missing LAM br 6 cr 5

8⁰⁰ Kawagoe, Kleinwort on shift
phone from P. Warming, the last Dump Job ~~has~~ finished incompletely. The data of the last night was not written. phoned the expert W. Bartel. He will look for it.
8²⁵ Gas check done

8⁴⁵ Nord-10 hang up: "TRANSF!!" on system console, not possible to load Nord, called J.O., put system disk into 3rd drive
9⁰⁵ Nord-10 back to operation, J.O. will come in at 12⁰⁰
9¹⁰ Dump jobs are ok, one of them failed because a new dump was started, when the 1st one was still active. No data lost. Seems to be in order again W. Bartel
9¹⁶ YSPY three Digitizers running 145, 147
9²⁰ JDAS ERROR 33: Missing LAM BR 7 CR 1, BR 6 CR 3 : ID B3
1X 4X → Pause Crashmus
9⁵² 3X and JDAS ERR 51: Fibre OLB interrupt BR 6 CR 3
9⁵⁴ 4X
9⁵⁶ 3X
11¹⁰ Several 11 BR 4 CR 6
13⁰³ ID and Vtx Ch. Soft trip
PKR says " ENERGIE ÄNDERUNG" 21.800 → 21.836
TOF rate is about 45 T!
~~Start a~~ Stop current RUN and start new Run.
13³⁹ YSPY TRIGGER 2 output missing 169
14⁰⁰ " 149
14¹⁵ " 145

15⁰⁰ Backup of disc made, system back on blue drive. To see how long before next transfer error J.O.

15²⁴ ID, Vtx, Z-chamber tripped.
15⁵⁸ JDAS ERROR 45 MP-16 analysis incomplete: YY = ⁂

16⁰⁰ Skard + Komamiya
16³⁰ Z-chamber trip
~17⁰⁰ JDAS error 33 Missig LAM Br=4 Cr=6 ID rig 2 ← 18³⁰ gas check done
19⁴⁰ Trigger 2 output missig: 145
19⁵⁰ JDAS readout error 33 Missing LAM Br=4, Cr=6 ID rig 2
20³⁵ 3 chambers (hard) tripped
20⁴⁰ Vertex chamber ~~trip~~ hang trip
20⁵⁸ JDAS readout error 46 MP-16 out of sequence ; YY=1
" " 45 MP-16 Analysis incomplete ; YY=1
22¹³ Vertex chamber hard trip
22⁴⁵ —— " ——

18/6/85

0⁰⁰ Laurikainen + Bethke on shift
0⁴⁰ short break, injection problems
1⁴⁰ beams back
2²⁰ alert of bp-ch fast trips. Dead time due to that ≈ 50%. Background in ID and TOF quite ok, L relatively high (> 5·10³⁰). We decide to run with bp-ch, ~~8~~ start new run 27414.
→ message: bp-ch trip, and also 1/rec - beep.
strange: no rejection during data taking!? Do a test-run without writing data to IBM:
(and no latch banks) everything is ok. What happens?
At several SADE meetings it has been said that if BPCH is off at run start thing will FAIL
For we don't understand this behaviour and don't find any intelligent instruction about this problem, we decide to run up again the bp-ch, run 27446 started. (27414 + 27445 have been without bp-ch, no latch banks, no rejections, ...)
Smoothly running, but again bp-ch trips ...
3⁰¹ Now we found the crucial message in the log book (~~27~~ 27/4/85), that no run should be started without bpch off, no detectors will be read out. Only after the pedestal events, bpch may miss.
But, why does it work not writing data to IBM? Where is the logic? ← Data not written to IBM
Such important messages should not be hidden somewhere in old log-books. Is not "production data" and so hrehbits HV box does not cause a TRIP.

RUN	DATE	START	STOP	AT RUN START I^+	AT RUN START I^-	DEAD TIME (%)	TIME (sec)	RECORDS IN	RECORDS OUT	ALL $\times 10^6$	T∅ REJ $\times 10^6$	T_1 ACC SUM	T_2 ACC SUM	T_1 Bit 2 $E_{LG} > 6$ GeV	T_2 Bit 17 $2T \cdot E_{LG} \geq 2TR$
21398	17/6/85	12^{13}	12^{54}	5.68	5.59	24.7	2446	8002	4763	636	157	4235	5155	1145	40
21399	"	12^{56}	13^{02}	4.91	4.83	31.4	361	1144	684	94	29	619	648	160	6
21400	"	13^{09}	13^{59}	3.29	3.33	15.3	2998	7503	3755	880	119	4526	5121	957	30
21401	"	14^{00}	14^{41}	2.86	2.90	13.8	2389	5758	2800	622	86	3544	3902	770	19
21402	"	15^{18}	16^{04}	5.69	5.56	21.1	4638	8001	4638	667	141	4300	5314	1089	47
21403	"	16^{06}	16^{51}	4.82	4.47	18.2	2641	8002	4483	687	125	4474	5280	1096	41
21404	"	16^{52}	17^{41}	4.18	3.87	16.3	2909	8002	4212	767	123	4621	5439	1057	30
21405	"	17^{41}	18^{34}	3.62	3.35	14.4	3144	8002	4050	818	118	4744	5403	1113	32
21406	"	18^{35}	19^{32}	3.16	2.91	12.7	3393	8002	3790	883	112	4919	5419	1003	16
21407	"	19^{32}	20^{01}	2.75	2.54	13.1	1692	3968	1807	440	58	2464	2644	528	11
21408	"	20^{35}	21^{25}	6.05	6.03	28.0	2698	8001	4580	505	196	4259	5240	1116	37
21409	"	21^{26}	22^{13}	5.10	4.77	21.0	2824	8002	4258	734	154	4397	5329	1024	27
21410	"	22^{13}	23^{05}	4.33	4.05	19.8	3060	8002	4073	796	156	4671	5221	1062	24
21411	"	23^{05}	23^{58}	3.66	3.43	14.2	3156	8002	3947	821	117	4810	5314	1045	30
21412	"	23^{59}	0^{21}	3.11	2.90	13.0	1095	2631	1243	285	37	1571	1735	346	10
21413	18/6/85	149	2^{23}	6.00	5.92	24.9	893	2548	1390	232	57	1239	1731	302	9
21414	"	2^{24}	2^{27}	} junk											
21415	"	2^{31}	2^{36}												
21416	"	2^{42}	3^{37}	5.04	5.03	20.5	2944	8002	4258	765	156	4448	5454	1063	31
21417	"	3^{39}	4^{57}	4.19	4.20	18.1	3147	8002	4095	819	148	4656	5575	1065	28
21418	"	4^{52}	5^{57}	3.23	3.40	13.8	3421	8002	3700	889	123	4798	5574	987	20
21419	"	5^{58}	7^{06}	2.67	2.87	12.0	3636	8001	3393	946	113	5053	5351	1012	32
21420	"	7^{05}	7^{36}	2.21	2.44	10.9	1751	3776	1592	456	49	2398	2496	455	11
21421	19.6.85	456	5^{03}	5.33	5.14	12.2	359	1009	472	93	11	530	710	107	5
21422	"	5^{05}	5^{53}	5.14	4.99	10.3	2661	6261	2856	693	72	3536	4636	729	19
21423	"	6.24	7.16 7.22	5.94	5.92	13.3	3029	8002	3835	788	105	4294	5939	951	27
21424	"	7.15	7.43	5.22	5.28	11.5	1618	4106	1925	421	48	2256	3106	488	14
21426	"	9.45	10:37	5.57	5.40	11.1	3069	8001	3586	798	88	4277	6054	906	26
21427	"	10:37	11^{34}	4.93	4.78	14.6	3192	8001	3559	830	121	4419	5583	984	29
21428	"	11^{34}	12^{33}	4.35	4.23	13.8	3368	8002	3487	876	121	4550	5562	973	25
21429	"	12^{34}	12^{51}	3.84	3.75	12.5	990	2352	1078	257	32	1350	1618	276	10
21430	-"-	1440	15^{32}	5.59	5.85	18.4	2953	8002	3955	768	141	4124	5573	977	23
21431	"	15^{32}	16^{23}	4.82	5.18	16.5	3008	8001	3885	783	129	4426	5487	1086	28
21432	"	16^{23}	176	4.23	4.57	15.8	3171	8002	3889	825	131	4533	5516	1094	28

PROCESSORS ON/OFF N50	MIP	TOF	FAMP	<L> 10^{30} cm^{-2} s^{-1}	Bhabha $\int L dt$ nb^{-1}	$\int L dt$ EXP. ENERGY	IBM TAPE OUTPUT	AT RUN START ID (mA)	AT RUN START TOF (V)	ON LINE REJ. SUM MIPROC T_2 %	ON LINE REJ. NORO-SO T_1 & T_2 %	Σ_{Bhabha}	MH	E_{Beam}	Mag. Field -1*Gauss	Remarks
ON	ON	ON	OFF	4.09	11.04	6588.64	IBM	1.4	1.3	40	43	125	3	21.800	4841	
"	"	"	ON	3.17	0.87	6589.61	"	1.2	1.2	37	43	11	0	21.800	4841	stop due to the energy change.
"	"	"	"	1.50	4.24	6603.85	"	0.8	0.8	50	52	48	2	21.800	4840	
"	"	"	"	1.23	3.09	6606.94	"	0.6	0.6	51	53	35	0	21.800	4840	Beams dumped.
"	"	"	OFF	4.00	10.25	6617.19	"	1.35	1.2	45	43	116	6	21.802	4840	
"	"	"	"	3.06	6.45	6623.64	"	1.10	1.1	47	44	73	3	21.800	4840	
"	"	"	"	2.24	7.78	6621.42	"	0.95	0.9	50	47	88	0	21.802	4840	
"	"	"	ON	1.78	5.21	6626.63	"	0.70	0.7	47	52	59	1	21.800	4840	
"	"	"	"	1.34	3.00	6629.63	"	0.65	0.6	57	55	34	1	21.800	4841	
"	"	"	"	1.04	1.50	6631.13	"	0.55	0.5	49	57	17	0	"	4841	Beams dumped
"	"	"	"	3.81	9.54	6640.67	"	1.4	1.15	45	40	108	3	21.802	4841	
"	"	"	"	2.93	6.89	6647.56	"	1.2	1.05	49	43	78	6	21.802	4840	
"	"	"	"	2.17	5.92	6653.48	"	1.0	0.9	46	52	67	2	21.800	4840	
"	"	"	"	1.68	4.77	6658.25	"	0.9	0.7	48	53	54	1	21.800	4840	
"	"	"	"	1.34	1.50	6659.75	"			47	55	17	1	"	"	Beams dumped
"	"	"	"	4.11	3.09	6662.84	"	1.4	1.2	39	42	35	2	"	4841	
							"	1.2	1.05							bpch off } junk
							"	1.2	1.05							" " } junk
"	"	"	"	3.12	9.17	6672.01	"	1.2	0.95	45	49	86	1	21.800	4840	bpch on
"	"	"	"	2.03	6.38	6678.39	"	1.0	0.8	48	51	74	1	21.800	4841	
"	"	"	"	1.36	4.65	6683.04	"	0.8	0.7	50	56	60	1	21.800	4841	
"	"	"	"	1.01	3.66	6686.70	"	0.6	0.5	51	60	33	1	21.802	4841	
"	"	"	"	0.76	1.33	6688.03	"	0.4	0.4	57	60	13	0	21.800	4840	beams dumped
"	"	"	"	3.79	1.33	6689.36	"	1.2	0.75	38	55	15	0	21.802	4837	VTXC not in Readout.
"	"	"	"	3.36	8.48	6697.84	"	1.1	0.7	45	56	96	4	"	4838	" " " "
"	"	"	"	4.25	11.49	6709.33	"	1.4	0.75	41	53	130	1	21.802	4837	" " " "
"	"	"	"	3.33	4.24	6713.57	"	1.2	0.85	44	54	48	3	21.800	"	" " " " " Beam loss
"	"	"	"	3.9	10.25	6728.82	"	1.4	0.9	42	56	116	3	"	4847	no VTXC readout
"	"	"	"	2.8	8.93	6732.75	"	1.2	0.7	41	58	88	2	"	4848	VTXC back & readout
"	"	"	"	2.00	6.36	6738.11	"	1.0	0.6	46	58	72	1	"	4850	
"	"	"	"	1.69	1.41	6740.52	"	0.9	0.5	47	59	16	1	"	"	trasmo test
"	"	"	"	3.86	10.89	6751.21	"	1.3	1.	41	53	121	3	"	4841	
"	"	"	"	3.32	8.19	6760.40	"	1.2	0.7	45	54	104	2	"	4841	
"	"	"	"	2.85	8.39	6768.79	"	1.0	0.65	48	54	95	2	"	"	

3^{30} reversal times missing Lam 6:1 cr1 (bych). And 6:4 cr6 (Ring2)
end: once system-crate watchdog flag error 53
4^{12} after hard ID.-trip (also bpch + zch): reversal (10-20) missing LAM 6:2 cr3 (TOF1) and 6:1 cr1 (bych).
causes itself.
6^{45} Lumi small, but PKR cannot fill (problems with linac). So we keep this filling.
7^{35} PKR wants to dump the beam, though they cannot refill for the next 3...4 hours, because K-people want to use this time for some changes.
Run down magnet to 500A.

8^{00} Becker, Finch

11^{30} Gas check
12^{23} PKR rang: no beams till 'Morgen Früh'

14^{00} The magnet control unit for the N10 has been repaired so that the field can be set from the DORIS-Terminal with F14/F6, as before.
Report any further problems with the steering to E. Elsen. Do not pull out the unit (or use the hammer) unless you understand the problem.
The previous "Wackelkontakt" only occured since the unit was pulled in and out for no reason! It is a wire-wrapped unit!
If the field changes during a run it is because the current really changed and not because the computer decided on a new field. There is no ~~active~~ regulating from the computer. The current can only be set!

E. Elsen

16^{00} Middleton, Hagemann

16^{15} Gas check done
24^{00} Olsson / Schmel
24^{10} Gascheck done
19/6 03^{00} Injection, magnet to 7500 A: Computer Control works!
4^{55} Start R 2142, with VTXC out of Readout, impossible to switch on! (Tripping ...)
Miss LAM 4:6 → 6:3 all the time! Stop Run Tab Run: 2 Miss Lam 6:3, then OK
R 21422: " " "
3. Shaad tries to raise the voltage, by slow-ramp at end. This also fails

Missing Expert-Call

Miss LAM 2:4 All efforts to raise VTXC failed
— " — 4:6 4:6
5^{50} Schech soft trip, shortly afterwards dump beam
7^{30} Miss. LAM 4:6 4:6 4:6
7^{55} PETRA break 'till ~ 8^{45}; Magnet → 1000 A

8^{00} Dietrich, Feist on shift
8^{15} Gas check done
For some reason (unknown to me) the "parameters for LG readout" were not what was expected by TPARA.
The LG READOUT MODE was 2 - reset to 7. seems to work (MEM).
10^{38} VTXC Readout enabled
12^{25} z-chamber trip
12^{50} beam loss, all chambers trip
15^{30} z-chamber trip

16^{00} Dietrich and Kawagoe on shift.

16^{10} Gas check. C_4H_{10}-monitor (Mailld OPOR) was not OK (2mA instead of 10mA), called expert Seidel & Chen. they called next expert from the gas-group. ~~They~~ Error is purely electric, tomorrow morning at 8:00 Gas-people will repair it.

16^{50} IBM TRANSFER ERROR → IBMLINK AGAIN → OK.
17^{55} ID. & VTX soft trip. → then "switch off High Voltages"

~~2000~~
20/6 Thursday
00:00 Glaser & Middleton on shift
Error 4 about every hour
00:30 Gas check done

1:08 Z chamber HT trip
1:40 new fill, inverter chamber won't stay on (currents are not correct) no response to beeper - who are these experts?
2:15 restart it looks ok

2:45 inverter chamber has tripped many times now but seems to be OK for the moment.
3:47 "Short Break" A unity or Tube is gone
5:00 : Injection
5:50 beam but BP chamber won't come up; called expert
6:08 run 21443 started

RUN	DATE	START	STOP	At RUN START I⁺	At RUN START I⁻	DEAD TIME (%)	TIME (sec)	RECORDS IN	RECORDS OUT	ALL *10⁶	TØ REJ *10⁶	T1 ACC SUM	T2 ACC SUM	T1 Bit 2 EL>6 GeV	T2 Bit 17 2T1 E4>2 2TR
21433	19/6/95	17:17	17:35	3.69	4.01	1.89	1051	2577	1162	273	41	1456	1840	338	5
21434	"	18:26	19:16	5.43	6.42	19.7	2921	8002	4191	760	149	4115	5627	945	28
21435	"	19:17	20:16	4.72	4.11	18.9	2873	8000	4150	747	140	4287	5586	1025	39
21436	"	20:16	21:12	4.06	4.11	15.9	3110	8001	4072	809	128	4395	5277	1025	32
21437	"	21:13	21:31	3.67	3.63	13.1	1092	2697	1410	284	37	1557	1851	356	5
21438	"	22:03	22:49	5.57	5.66	22.7	2742	8002	4232	713	161	3986	5605	1008	26
21439	"	22:50	23:39	4.26	4.43	18.2	2831	8001	4150	736	134	4270	5552	1078	30
21440	20/6/95	23:38	0:24	4.25	4.42	16.3	3095	8002	4027	795	129	4421	5436	1052	24
21441	20/6/95	0:30	1:21	3.71	3.88	13.9	2945	7337	3530	766	106	4282	5092	1036	23
21442	"	2:17	3:07	5.46	5.69	21.3	2094	6115	3334	542	115	3257	4248	894	25
21443	"	6:10	6:56	5.56	5.55	23.2	2791	8002	3914	726	168	3765	5366	876	18
21444	"	6:58	7:37	4.80	4.89	19.5	2438	8795	3387	694	123	3504	4524	819	23
21445	"	15:45	16:38	5.45	5.55	15.4	3091	8002	3906	805	124	4324	5723	0	6
21446	"	16:41	17:34	4.69	4.85	14.2	3140	8002	3822	817	116	4344	5559	180	13
21447	"	17:34	17:59	4.03	4.25	13.8	1455	3675	1693	379	52	2127	2470	0	4
21448	"	18:01	19:01	3.53	4.01	12.5	3615	8002	3396	941	117	4755	5664	1091	25
21449	"	19:07	19:07	2.91	3.56	12.7	284	660	256	75	10	375	451	79	5
21450	"	19:31	19:43	1.73	3.35	9.7	617	1310	503	161	16	1659	821	206	6
21451	"	19:56	20:08	1.63	3.23	10.8	417	835	328	108	12	1117	607	105	0
21452	"	20:39	21:34	6.67	5.76	19.2	2927	8002	4028	761	146	4159	5605	1092	15
21453	"	21:34	22:37	4.66	4.72	16.5	3210	8002	3697	835	138	4600	5399	1122	18
21454	"	22:38	23:26	4.01	3.77	12.4	2908	6724	2853	756	94	4037	4554	1021	30
21455	24/6/95	00 53	01 29	5.73	5.85	16.2	2598	6751	3287	676	109	3705	4570	910	30
21456	"	01 38	02 33	4.95	5.24	14.5	3128	8002	3714	814	118	4580	5345	1144	26
21457	"	02 33	03 17	3.06	4.54	12.5	2551	5796	2451	663	83	3497	3791	834	13
21458	"	04 21	05 16	5.36	4.76	13.7	3257	8001	3680	848	116	4414	5513	1075	31
21459	"	05 17	06 13	4.68	4.16	13.1	3223	7878	3462	838	109	4642	5221	1168	19
21460	"	06 45	07 41	5.96	6.06	15.4	2850	8002	3915	741	118	4474	5478	1121	25
21461	"	07 41	8 28	5.0	5.18	16.1	2693	7267	3463	701	113	4088	4747	1138	22
21462	"	8 59	9 47	5.92	5.92	19.0	2835	8002	4138	788	141	4263	5445	1153	25
21463	"	9 47	10 37	5.02	5.16	16.5	2969	8002	3874	772	127	4585	5267	1246	31
21464	"	10 37	11 28	4.34	4.50	15.3	3036	8002	3757	790	121	4666	5289	1289	29
21465	"	11 29	12 20	3.74	3.93	13.8	3086	7443	3335	803	111	4472	4873	1196	17
21466	"	13 32	14 20	5.92	5.91	18.6	2901	8002	4093	755	140	4248	5338	1075	21

Processors ON/OFF NEB	MIP	TOF	FAMP	<L> 30 10 cm⁻²s⁻¹	Bhabha ∫Ldt nb⁻¹	∫Ldt Exp. ENERGY	IBM/TAPE OUTPUT	At Run Start IO (μA)	At Run Start TOF (V)	ONLINE REJ SUM MIPROC T2 %	ONLINE REJ NORD-50 T1 & T2 %	∑ Bhabha	MH	E beam	Mag. Field −1xGeV	Remarks
ON	ON	ON	ON	1.70	1.94	6770.83	IBM	0.9	0.75	47	57	22	1	21.800	4842	Beams Dumped.
"	"	"	"	3.73	9.72	6780,45	"	1.2	1.0	42	50	110	5	"	4841	
"	"	"	"	2.15	6.18	6786,63	"	1.0	1.4	45	51	66	1	"	4842	
"	"	"	"	2.	4.86	6791,49	"	1.0	1.2	47	52	55	1	"	4841	
"	"	"	"	1.92	2.39	6793,88	"	1.0	1.1	48	55	27	1	"	4841	Beams dumped
"	"	"	"	3.79	9.72	6803.60	"	1.4	1.3	42	50	110	1	"	4841	
"	"	"	"	2.85	8.31	6811.91	"	1.0	1.1	45	51	94	3	21.802	4840	
"	"	"	"	2.39	8.48	6819.39	"	1.0	1.0	46	52	96	3	21.800	4.840	
"	"	"	"	1.44	5.21	6824.60	"	0.8	0.9	48	54	59	0	21.800	4.840	Beams dumped
"	"	"	"	3.45	6.18	6830.78	"	0.8	1.4	44	48	70	2	21.800	4.838	Beam lost
"	"	"	"	2.74	9.10	6839.88	"	1.8	1.2	35	54	103	4	21.800	4840	VTXC HT changed to 1450
"	"	"	"	2.46	7.16	6847.04	"	1.4	0.8	40	53	81	1	21.800	4840	Beam lost
"	"	"	"	4.01	11.13	6858.17	"	1.1	0.75	44	53	126	2	21.802	4844	VTXL HV=1450 / VTXC HV=1425 — anomalies in run sheets for these runs. See note on p.58
"	"	"	"	3.09	8.92	6867.09	"	1.1	0.75	44	55	101	3	--	--	
"	"	"	"	2.59	3.98	6871.07	"	1.0	0.65	47	56	45	0	"	--	
"	"	"	"	1.93	5.57	6876.64	"	0.9	0.85	50	60	63	0	21.800	4841	
"	"	"	"	1.81	0.35	6876.99	"	0.7	0.55	49	64	4	0	--	--	Run stopped to investigate JETC problem
"	"	"	"	0.91	0.88	6877.87	"	0.5	0.4	51	64	10	0	"	4841	
"	"	"	"	0.82	0.44	6878.31	"	0.5	0.4	53	64	5	1	"	4841	
"	"	"	"	3.52	9.01	6887.32	"	1.4	1.5	43	52	102	2	21.802	4841	
"	"	"	"	2.68	8.04	6895.36	"	1.2	0.8	46	56	91	2	21.800	4842	
"	"	"	"	2.23	5.57	6900.93	"	0.9	0.55	48	60	63	2	21.802	4841	Beams dumped.
"	"	"	"	4.22	10.69	6911.62	"	1.3	0.75	41	53	121	3	21.800	4840	VTXC OFF AT RUN START
"	"	"	"	3.54	10.51	6922.13	"	1.1	0.65	44	56	119	4	"	4838	
"	"	"	"	2.18	5.12	6927.25	"	0.8	0.5	47	60	58	1	"	4841	Beams lost
"	"	"	"	3.54	10.16	6937.41	"	1.1	0.65	45	56	115	1	"	4838	
"	"	"	"	2.69	8.57	6945.98	"	1.0	0.55	47	58	97	0	"	4840	Beams lost
"	"	"	"	4.68	11.75	6957.73	"	1.4	0.9	41	52	133	4	"	4840	
"	"	"	"	3.84	9.01	6966.74	"	1.2	0.65	42	55	102	4	"	4840	Beams dumped
"	"	"	"	4.81	13.96	6980.70	"	1.4	0.9	42	50	158	2	"	4840	
"	"	"	"	3.67	11.31	6992.01	"	1.2	0.75	45	54	128	6	"	4840	
"	"	"	"	2.87	8.48	7000.49	"	1.0	0.65	46	55	96	6	"	4840	
"	"	"	"	2.35	6.80	7007.29	"	0.8	0.60	48	57	77	1	"	4841	Beams dumped
"	"	"	"	5.13	14.31	7021.60	"	1.3	0.9	41	51	162	2	"	4842	5547 µ-vtx missing (problem with crate 8)

6^{10} Under instruction from Sylvant VTXC set to 1450 V as VTXC could not be kept at 1475 V

6^{20} MFR 61 all voltages zero — reset at back of hall.
6:30 current display events

7^{03} Occasional message "TDAS READOUT ERROR 33 – missing LAM branch 4 crate 6 ID ring 2"
(every ½ hour or so)

7^{05} unable to get any output on LUN 34. Requests for online event display come back with "TOO QUICK – DISPLAY BUSY – WILL WAIT UP TO 20 SECS".
7:34 Short Pause → 10 PM

8^{00} 20/6/85 H. Mills + M. Luhlen on shift

We inherit ghost breaks. Event display unjammed. Magnet lowered to 500A
We expect a call from Herr Delfs to test module on IBM link. – ~~the volt~~
The "NO TRIGGER BITS" problem is back again.
YSPY updated – it BP-ch, Z-ch or Muon-ch not in readout, it automatically does not check these detectors.
New version (850b) Nord-50 program installed. ~~bb~~

10^{05} short break to endw 10"s...

15^{05} Test of original driver modules in multiplexor (changed by Herr Delfs at weekend). They work and so are left in place.

16^{00} 20/6/85 J. McCormindale & G. Heinzelmann

TRIGGER 2. OUTPUT MISSING : LAM 151.

16^{30} Derek Jarvill arrives.

18^{00} We noticed anomolies in the run sheet for the last run (21446), in particular all bits for "T1 accept" were zero except "sum", also data on the lines "N50 T2, Accepted & Rejected" were crazy. We called Howard, but he was unavailable so we called Tor Olsson. He comes and looks at our problem. The new NSODAR program (installed this noon by HEM) was replaced with the backup: this cured the problem! Have overwritten NSODAR with OLD-NSODAR so that the default is OK! J.O.
R 21450 New versions of YPARA, ZREAD installed: it is now possible to start a run with full readout but with vertexchamber still off HV. When the VTX chamber is up in HV, it will automatically be included in the readout, provided it is included in the normal readout pattern. J.O.

19^{30} Another effect noted in connection with the malfunctioning NSODAR: After replacing NSODAR with the OLD-NSODAR (by COPY-FILE), ZDAS refused to load NSODAR, but accepted (DAS) OLD-NSODAR ... J.O.
↖ must have been 'finger trouble' – it worked for me! HEM

20^{38} Run 21452 started with new beam
20^{41} ID & Vertex chamber trip.
21^{40} ~~HS to~~ Vertex chamber trip
22^{00} ID trip, Vertex chamber trip, Z-chamber trip!

0^{00} Hedgecock & Magnussen 21 – 06 – 85
Started over from afternoon shift. DIP in ID wire map and timing map R3. V34?
0^{05} Gas check o.k.
00^{53} RUN 21455 STARTED – DURING PEDESTAL RUNS, PAUSE RUN PRESSED – NUMBERS OF EVENTS READ TO IBM CONTINUES TO INCREASE – BUT! I NOTICED RUN PAUSE WAS STILL THERE AT 01^{07}. PRESSED CONTINUE AND EVERYTHING CONTINUES NORMALLY. WHY?
02^{22} ID SOFT TRIP VTXC TRIP. PARTIAL BEAM LOSS.
02^{54} MUON CRATE 8 MISSING. PRESSED RESET TWICE, LOOKED A CRATE AND LED WORKS FLASHING BUT STILL INDICATES AS MISSING. PRESSED RESET AGAIN – RUNNING NORMALLY?
7^{08} The new fill was ready at 6^{45}. Since then we have had lots of VTX trips (soft & hard ones)
TOF ∝ 0.9 V
MANY VERTEX CH TRIPS. 10 Missing LAM br 4 cr 6 in this shift.

8^{00} Cartwright & Antonis 7^{50} Gas check done

8^{16} Lenske phones from PKR. They complain that the VXC current signal which we send them is "not very suitable for optimisation. It does not move steadily down as the fill progresses, it is much higher than the other signal we send [the TOF rate] and it appears to fluctuate without reference to PETRA conditions." I explain that it's the only thing we can send that they've ever been able to use to optimise for the vertex chamber, but promise to ask the relevant people if they have anything else they could try.

8^{28} Suddenly get SWITCH OFF HV message. Nobody told me to expect a new fill!
8^{30} Apology from Mr J. PETRA wanted a new fill at short notice because DESY is due to go down and they will fill before it does.
8^{58} VXC soft trip

9^{08} MP-16 analysis incomplete ; YY = 1 (again 9^{50}, 10^{03}
9^{20} Thresholds of V34 (104) adjusted . V. Saxbuas [Wire map hist for r21462 cleared at ~4000 events]
Lumi of ~~13.96 nb^{-1}~~ for run 21462 seems to be a record for this logbook!
10:37 VXC soft trip
12^{10} YSPY - trigger 2 o/p missing: 143 153

Run summary program updated to allow for new N50DAR program
I repeated the COPY-FILE restoring old version as last night - it worked perfectly
Thus new N60DAR re-installed. HEW

13^{40} Muon crate 8 missing & refuses to reset either in hardware room or at crate. Called Jan Chin

13^{54} Missing LAM at 3 cr 2 : µ-ch
System crate watchdog flag PARMS = 000002 140204
Missing LAM at 1 cr 1 : BPCH
} again 13^{59}. Pause/continue

14^{06} Muon crate 8 returns (courtesy of J Chin!)
14^{10} Muon crate 8 leaves again. Jan goes down to have another fiddle.
14^{16} Muon crate 8 with us again. But goes missing again almost immediately (Jan is presumably resetting at the crate.)

14^{23} No MUON CRATE MISSING message since start of run 21467 (four whole minutes !!)

14^{30} VTX hard trip, ID soft trip. JETCH HIGH CURRENT on colour TV. Z-chamber stayed up but its anode current showed quick spikes from ~2.5 µA to >6 µA. TOF spikes too. Both ID and VXC soft trip while running up. Switch z-ch off too and wait for a couple of minutes till TOF rate stable.
14^{40} Exactly the same thing happens again. They seem to be losing the beam a bit at a time. We decide to wait for a few minutes before switching on again.
14^{45} TOF rate stable. Switch on z-chamber. Z-ch stable - switch on ID (working from outside in!) ID stable - switch on vertex chamber. Vertex chamber hard trips (can't run them all!) but the other two stay up → CONTINUE run. Vertex chamber comes up OK on second attempt,
14^{54} VXC hard, ID soft trip. Z-ch says no spike now, so reset immediately. Vertex chamber hard trip again on its way up. Second attempt successful (for how long?) Mark J says they have no special problems with this fill.

21/6/85

16^{00} Schmidt & Warming on shift
Gas check OK
LG distribution 12, 13 HV wrong

17^{16} ID soft trip due to background optimalisation.
18^{22} Beams lost
20^{10} new fill
20^{20} VXC hard trip.
20^{55} VXC continues soft trips started by the hard trip at 20^{20}
21^{00} VXC HV now at 1425 Volt, at this voltage stable for 10 minutes
21^{20} tried to raise voltage again, → immediate soft trip ~~reduce the to~~ run at reduced voltage
phoned expert on duty (Hagemann). J advised us to
he made a strong point of not taking the vtrack out of the readout.
We continue to run at 1425 V
21^{40} the result of the desired background optimalization: ID: 1 µA → 2 µA now !!

23^{55} ~~g~~Gould plotter kaputt when ??? how long ???
what happened was that after the last run summary the machine stopped to feed the paper
we tried on/off, print command from command console and tektronix, local paper feed. all gave no result
— fuse broken —

22.6.85

00^{00} Daviill & Kuhlen on shift.
0^{50} Vertex-chamber HV back to 1425 V. Gas check done.
2^{40} "JOIS Readout Error 33. Missing LAM branch 4 crate 6 : ID Ring 2" several times
2^{50} We looked through the standard histograms. They are all right.
5^{00} Comment: during this shift we have had a great many "JDAS ERROR 33 - Missing LAM branch 4 crate 6 ID ring 2"
5.30 Vertex chamber trip.

8^{00} H.M.H + A.D. Briefing

The counting house spot lights gave a bright flash when switching on/off are now broken.

8^{20} Beams ready
8^{23} Beampipe chamber trip
8^{26} again
8^{22} again
10^{12} Gas check done.
10^{45} Reform job submitted.

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RUN	DATE	START	STOP	AT RUN START I^+	AT RUN START I^-	DEAD TIME %	TIME sec	RECORDS IN	RECORDS OUT	ALL $\times 10^6$	TØ REJ. $\times 10^6$	T_1 ACC SUM	T_2 ACC SUM	T_1 BIT 2 $E_{tot} > 6$GeV	T_2 BIT 17 $2T \cdot E_{tot} \geq 2$TR
21467	21/6/85	14^{20}	15^{30}	5.02	5.10	~~1.48~~ 1.39	3039	8002	3871	791	117	4714	5251	1272	23
21468	"	13.31	16:23	4.06	3.85	14.0	3118	7678	3417	812	114	4650	4989	1239	17
21469	"	16:56	17:46	5.82	5.86	19.7	2780	8001	4054	724	143	4278	5468	1186	28
21470	"	17:47	18:22	4.60	4.86	15.8	1874	5537	2746	514	82	3130	3702	837	16
21471	"	20:15	21:06	5.79	5.77	16.7	2861	8002	4118	650	121	4482	5633	1118	24
21472	"	21:07	21:58	4.82	5.04	20.7	2709	8002	3540	705	146	3679	5817	1043	29
21473	"	21:59	22:44	4.30	4.45	21.0	2707	8002	3369	704	148	3582	5558	1009	30
21474	"	22:45	23:29	3.88	4.05	16.5	2607	7306	3055	619	112	3523	5066	864	16
21475	22.6.85	0:25	1:21	5.60	5.76	16.3	2973	8002	3917	773	126	4414	5433	1093	22
21476	"	1:21	2:13	4.79	5.00	16.0	3026	8002	3759	787	126	4527	5376	1284	26
21477	"	2:12	3:07	4.13	4.42	14.1	3138	8002	3805	828	117	4772	5287	1270	21
21478	"	3:05	3:53	3.67	3.91	14.0	2754	6484	2839	718	100	3879	4360	1009	20
21479	"	4:33	5:25	5.56	5.66	16.6	2878	8001	4019	749	125	4354	5333	1152	22
21480	"	5:25	6:18	4.59	4.92	15.1	2936	8002	3844	779	117	4618	5266	1309	23
21481	"	6:18	7:14	3.96	4.30	14.0	3265	8002	3634	850	119	4779	5388	1271	20
21482	"	7:14	7:26	3.46	3.79	92.2	699	1719	757	182	22	1049	1094	292	4
21483	"	8:20	9:05	5:75	5:74	15.8	2882	8002	3948	750	118	4349	5382	1116	29
21484	"	9:23	10:20	4.54	4.79	25.9	3419	8002	3771	899	229	4644	5178	1243	26
21485	"	10^{20}	11:16	3.85	4.10	13.4	3297	8001	3557	857	114	4856	5293	1338	21
21486	"	11^{16}	11:37	3.35	3.60	12.2	1217	2168	1266	317	38	1849	1972	518	4
21487	"	12^{03}	12^{13}	6.02	6.00	19.2	583	1710	862	151	29	892	1130	214	5
21488	"	13:23	14:16	5.69	5.00	13.7	3133	7796	3547	815	112	4225	5474	887	23
21489	"	14:46	15:33	5.91	5.91	17.8	2815	8002	3907	732	131	4344	5307	1118	18
21490	"	15:40	16:46	4.92	5.10	14.6	3076	8002	3592	799	117	4662	5265	1303	19
21491	"	16:46	17:51	4.17	3.72	12.5	3321	8002	3372	864	108	4939	5142	1377	15
21492	"	17:51	18:02	3.61	3.20	11.4	555	1324	552	144	16	802	810	241	3
21493	"	18.46	}	Nonsense	runs	because	of	TETC	Readout	trouble					
21494	"														
21495	"	19.24	20:13	5.05	5.39	14.0	2942	8002	3731	765	107	4764	5295	1420	23
21496	"	20.13	21:08	4.39	4.76	14.8	2460	6225	3066	624	92	3715	3966	1046	15
21497	"	21.38	21.97	5.69	5.66	19.2	688	2047	989	179	27	1130	1412	304	3
21498	"	22.01	22:51	5,21	5,37	16.5	2832	8001	3842	615	121	4582	5117	1394	26
21499	"	22:51	23:43	4,50	4,71	14.7	3049	8002	3659	794	117	4767	5160	1476	16
21500	"	23.43													

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NSD	MIP	TOF	FAMP	$\langle L \rangle$ 10^{30} cm^{-2} s^{-1}	Bhabha $\int Ldt$ nb^{-1}	$\int Ldt$ exp. E ≥ 21.60	IBM/ATME OUTPUT	AT RUN START IA μA	AT RUN START TOF V	ONLINE REJ SUM MACC T_2	ONLINE REJ NSD T_1 & T_2	$\sum_{Bhabha}$	MH	E_{beam}	MAG. FIELD	REMARKS
PROCESSORS ON/OFF																
ON	ON	ON	ON	3,4	10,78	7032,38	IBM	1.2	0.8	46 %	54 %	122	3	21.802	4844	
"	"	"	"	2.5	6,10	7038,48	"	0,9	0,6	48	58	68	0	21.800	4844	beam dumped
"	"	"	"	4,06	11,57	7050.05	"	1,4	1.2	41	51	131	5	21.802	4845	
"	"	"	"	3.37	6,36	7056.41	"	0.8	1.2	44	53	72	1	21.801	4844	beams lost
"	"	"	"	4.33	9.80	7066,31	"	1.3	0.9	43	50	112	3	21.802	4844	
"	"	"	"	2.11	3.89	7070.20	"	1.2	1.0	36	58	44	1	21.800	4844	VTXC 1425 V
"	"	"	"	1,62	4,95	7075.15	"	1.9	1.1	34	60	56	0	21.800	4844	
"	"	"	"	1.47	3.53	7078.68	"	1.7	1.0	37	60	40	1	21.802	4843	beam dumped
"	"	"	"	3.95	9.89	7088.57	"	1.2	0.9	43	53	112	0	21.802	4843	VTXC back up 1438 during run.
"	"	"	"	2.81	9.54	7098.11	"	1.1	0.75	45	55	108	6	21.800	4840	
"	"	"	"	2.24	6.18	7104.29	"	1.0	0.70	47	54	70	3	21.800	4842	
"	"	"	"	1.87	4.77	7109.06	"			48	58	54	3	21.800	4841	Beams dumped
"	"	"	"	4.08	11.48	7120.54	"	1,2	0,9	43	52	130	3	21.800	4841	
"	"	"	"	3.07	8.83	7129.37	"	1,0	0,75	45	54	100	6	21.800	4840	
"	"	"	"	2.34	7.16	7136.53	"	0.8	0.65	48	57	81	2	21.800	4841	
"	"	"	"	1.75	1.06	7137.09	"	0.75	0.55	48	58	12	0	21.800	4840	Beams dumped
"	"	"	"	4.95	11.49	7148.58	"	~~1.2~~ 0.7	0.7	40	53	130	1	21.800	4841	
"	"	"	"	3.13	9.98	7158.56	"	1.1	0.7	40	55	113	5	"	"	
"	"	"	"	2.74	8.75	7167.31	"	1.0	0.6	49	58	99	1	"	"	
"	"	"	"	2.18	2.83	7170.14	"	0.7	0.5	49	60	32	1	"	"	Beams dumped
"	"	"	"	5.32	3.00	7173.14	"	1.4	1.0	37	51	34	0	"	4842	beams lost
"	"	"	"	4.19	9.63	7182.77	"	1.1	0.7	43	57	109	2	"	4842	beam lost
"	"	"	"	4.54	12.46	7195.23	"	1.3	0.9	42	53	141	4	"	4844	
"	"	"	"	2,89	7,51	7202.74	"	1.0	0.7	45	57	85	2	"	4844	
"	"	"	"	2.08	5.92	7208.66	"	0,75	0.55	48	60	67	2	"	4844	
"	"	"	"	1.79	0,88	7209.54	"	0,45	0.6	45	61	10	1	"	4843	beams dumped
"	"	"	"					1.3	1.0					"		
"	"	"	"	3.50	9.98	7219.52	"	0.8	1.7	45	55	173	5	"	4844	
"	"	"	"	2.1	4.95	7225.47	"	0.68	1.0	46	53	56	1	"	"	beams partly lost, then dumped
"	"	"	"	4.45	4.06	7229.53	"	~~1.35~~ 0.95	~~0.95~~	39	53	46	1	"	4841	Magnet trip
"	"	"	"	3.52	8.57	7238.10	"	1.20	0.82	43	54	97	2	"	4840	
"	"	"	"	2.73	8.716	7245.26	"	1.1	0.7	46	56	81	4	"	4843	
								0.9	0.6							

The T2 output histogram seems to suffer from low statistics when checked by YSPY - have altered the settings via SPY-MASTER SO

12[00] New Fill Ready. Beampipe chamber tripped at start.
12[05] Trips again.
12[13] Beams lost. Everything trips
13[30] New beams. Lu Distributor 21 primary HV off for first 10000 events.
13[45] Up To now BP-CH has tripped 3 times in this Fill
DL8 89 exchanged (may be was made missing LAM's from Board 4 crate 6...)
15[50] All chambers trip but no apparent loss of beam
15[54] " " " with very small loss of beam.

16[00] Richhiel & Chin on shift
16[06] Vtx & I.D. had Trip.
16[27] Gould Plotter repaired ! And another Vtx & ID hard trip.
17[02] Vtx hard trip + ID soft trip.
17[20] " "
17[35] " " VTX-Ch. Soft trips. Why can they not be reset from above.
19[00] Problems on run start. Many errors Missing LAM Branch 7 Crate 1 (and occasionally crate 2-4.)
Called Ambus we noticed that all conversion Lamps of B.-4 Crate 1-4 were permanently a.
Possibly a failure of the clock distribution system. When we investigated the matter with the scope we must have touched the right connector. Everything worked again.
An observation: It seems that a VTCH trip with auto-removal from readout is followed by a TOAS Error 74 wrong LAM b.1 cr.1 Beampipe ch. immediately after the HV is up again.
(Noticed really all the time on several times until the end of the shift.)
14[35] There was a problem with the Vtx chamber. For Ten minutes it continually Tripped after being reset to its nominal voltage each time. Contacted on-call expert who suggested we reduce the anode voltage to 1450 kV. This we did & the system Then stabilized. Then we tried "upping" the volts back to 1475 kV. This time There appears to be no problem. The background conditions Throughout were very reasonable.
20[45] Jackpot hit. All chambers tripped. May be unstable beam conditions. Especially RZ-chamber needed several attempts to reset. What a mazical (maze-like) interlock between the various chamber trips ! Best advice to non-expert: Press all visible reset-buttons in a random sequence until the noise stops. Then try to run all chambers up. If the noise reappears, then

21[00] Senderausfall. ~~BPCH~~ + VTCH soft trips. but still some beam left after fierce excursions of the ToF rate
After this we continue the run, but Lumi ≈ 0.36 E30. Call Mark J to suggest a new filling.
21[02] Beams dumped.
21[37] Beams up again. Run started with VTCH down at first.
21[50] Magnet trip. Message in Interlock Alukreis Solenoid Durchfluß sekundär <.
Error could be reset by pushing the button. So magnet raised again, following the pending rules. But how to make a single scan on the datalogger ?
22[00] "soft trip" ~~schwelle~~ threshold of Q1 VTX chamber raised from 8.5 V → 8.3 V on DVM R-Test under the instruction of Jay Hyperman.
A question to Mills: can the VTXC-Take-Out-Automatism be extended to YSPY ?

23.6.85 0[00] Didricks & Fiben
0[10] notice JET wire 149 dead since run 21495.
0[15] missing wire problem apparently cured by knocking against DL8.
0[20] Gas check done

8[00] Bottke and Kavague on shift
8[20] Gas check done
8[49] Vtx ch. hard trip
8[52] " soft trip → several times.
9[32] Called vxch expert, for due to several hard + soft trips it was not possible to start new run. (Always Q1)
After advice, increased threshold for Q1 from 9.8 → 9.6 V.
12:00 After beams dumped: short circuit, magnet problem in Petra.
14:40 beams back
Message to day-shift on monday morning: one of the big fans in the roof of the hall is not working. Please try to ask for repair (HV3)
The warm reason will (hopefully) start soon!

16[00] ~ VTXC tripped. could not set the HV again. called the expert (Hagemann)
15[50] For now it's always Q3, increased Q3-threshold from 8.6 → 9.0 V. → Does not help, holds only ~ 10 secs. So (advice from expert) reduce vxch HV from 1475 to 1450. → stable!
15[40] meanwhile: "bad event structure, faulty part 1017 on colour TV
and: lots of "IBM online job error check no 2".
Call experts → no success (weather is too good!).
So stop run, exit, reload Nord.
Several problems: sometimes (after start run): Nord 50 not loaded; no events during ped. runs.
"Nord 50 busy".

RUN	DATE	START	STOP	AT RUN START I^+	AT RUN START I^-	DEAD TIME (%)	TIME (sec)	RECORDS IN	RECORDS OUT	ALL $\times 10^6$	Tϕ REJ. $\times 10^6$	T_1 ACC SUM	T_2 ACC SUM	T_1 BIT 2 $E_{LG} > 6$GeV	T_2 BIT 17 2T-$E_4 \geq$ 2TR	REMARKS
21500	22.6.85	23:43	0:37	3.35	4.16	12,7	3196	8002	3519	831	114	4911	5137	1487	22	
21501	23.6.85	0:37	0:53	3.47	3.68	12,2	1285	3026	1326	334	40	1885	1988	538	8	
21502	"	2:11	2:24	5.1	5.3	15,1	757	2052	975	196	29	1094	1422	280	8	
21503	"	2:35	3:21	4.95	5.21	15,7	2756	7385	3557	716	112	4287	4800	1239	22	
21504	"	3:23	4:15	4.47	4.62	16.3	3131	8002	3607	815	133	4785	5162	1407	19	
21505	"	4:16	4:44	3,72	4.08	13.0	1637	4091	1835	426	55	2509	2629	716	14	
21506	"	5:12	6:04	5.42	5.56	16.6	2831	8001	3841	736	122	4419	5317	1208	24	
21507	"	6:04	6:54	4.6	4.84	15,2	2930	8002	3747	778	118	4628	5212	1301	22	
21508	"	6:55	7:47	4.01	4.26	13.5	3134	8001	3548	816	110	4817	5209	1411	24	
21509	"	7:48	8:07	3.51	3.76	13.7	1138	2892	1268	296	40	1791	1840	492	7	
21510	"	8:35	9:24	5.85	6.67	17.6	2851	8002	3941	742	131	4392	5485	1243	19	
21511	"	9:30	10:19	4.93	4.89	15.1	2903	8002	3753	755	114	4678	5225	1412	18	
21512	"	10:19	11:11	4.31	4.27	14.3	3074	8001	3715	800	114	4796	5176	1406	25	
21513	"	11:11	11:52	3.76	3.75	13.0	2396	6032	2630	623	81	3612	3956	1028	15	
21514	"	14:43	15:01	5.28	5.31	15,2	1015	2742	1302	264	40	1456	1842	335	9	
21515	"	15:07	15:42	4.99	4.98	13.5	2005	5211	2617	522	70	3006	3662	782	15	
21516	"	15:43	15:48	Bad event structure												
21517	"	15:57														
21518	"	15:58	16:25	4.30	4.38	16,1	1647	4835	2667	428	69	3193	2728	639	3	
21519	"															
21520	"	16:33	16:55	3.88	3.87	13,2	1278	3385	1605	333	44	2078	2070	568	8	
21521-523	"		many ensc		no events											
21524	"	18.33	19:21	5,62	5,64	13,4	2863	8002	4068	747	100	4450	5666	1140	24	
21525	"	19:24	19:29	4.76	4.82	15,2	306	946	470	80	12	554	602	155	0	
21526	"	19:30	20:22	4.66	4.78	13.2	3015	8001	3878	800	106	4771	5563	1211	16	
21527	"	20:22	21:17	4.00	4.07	10.9	3249	8002	3811	845	92	4982	5530	1247	22	
21528	"	21:17	21:25	3.42	3.51	10.2	431	1054	473	107	11	686	643	173	4	
21529	"	23:43	23:58	5.49	5.40	38.2	862	4060	3180	224	86	3346	1063	202	2	
21530												JUNK				
21531	24.6.85	01:18	2:39	4,16	4,19	13,3	3501	8001	3620	911	121	4567	5917	1108	17	
21532	"	02:39	3:42	3,27	3,40	12,4	3688	7692	3318	960	118	4521	5653	1089	24	
21533	"	04:15	5:12	5,53	5,46	16,7	3010	8002	4038	783	130	4827	5565	1119	27	
21534	"	05:12	6:12	4,61	4,62	13,6	3329	8002	3792	866	118	4504	5662	1153	28	
21535	"	06:13	7:15	3,89	3,38	12,1	3604	8002	3540	938	113	4638	5802	1127	20	

PROCESSORS ON/OFF N50	MIP	TOF	FAMP	<L> 10^{30} cm^{-2}s^{-1}	BHABHA $\int L\,dt$ nb^{-1}	$\int L\,dt$ EXP. ENERGY	IBM TAPE OUTPUT	AT RUN START ID (μA)	AT RUN START TOF (V)	ONLINE REJ. SUM NR. T_2 Y.	ONLINE REJ. NORD-50 T_4 E_{TL} Y.	Σ BHABHA	MH	E_{BEAM}	MAG. FIELD	REMARKS
"	"	"	"	2.17	7.07	7252.33	IBM	0.9	0.6	48	58	80	2	21.8	4843	
"	"	"	"	1.57	1.86	7254.19	"	0,8	0,5	50	58	21	1	"	4840	beams dumped
"	"	"	"	4.25	4.33	7258,52	"	1,2	0.8	41	55	49	2	"	4841	
"	"	"	"	3.26	8.83	7267,75	"	1.0	0.8	44	54	100	3	"	4841	
"	"	"	"	2,5	7.82	7275,17	"	0.9	0.7	46	57	106	3	"	4840	
"	"	"	"	2.09	3.41	7278,58	"	0.8	0.7	48	57	35	0	"	4841	beams dumped
"	"	"	"	3.46	9.81	7288,39	"	1,3	0.9	42	54	119	3	"	4841	
"	"	"	"	2.77	7.86	7296,25	"	1.1	0.7	45	56	89	1	"	4841	
"	"	"	"	2.01	6.31	7302.56	"	0.9	0,6	47	58	75	1	"	4841	
"	"	"	"	1.76	2.00	7304.56	"	0.8	0.5	49	59	22	0	21.800	4842	beams dumped
"	"	"	"	4.09	9.89	7314.45	"	1.4	-1.1	42	53	112	2	"	4841	
"	"	"	"	2.87	8.48	7322.93	"	1.1	0.8	45	55	96	1	"	4844	
"	"	"	"	2.34	6.71	7329.64	"	1,0	0.7	46	56	876	1	"	4844	
"	"	"	"	1.89	4.54	7334.18	"	0.8	0.6	47	59	59	1	"	4846	beams dumped
"	"	"	"	4.86	433	7358.51	"	1.2	0.8	41	55	49	0	"	4838	
"	"	"	"	3,63	6.78	7364.69	"	1.15	0.8	44	54	70	5	21.800	4840	
								1.0	0,7							
"	"	"	OFF	3,24	5,39	7370.08	"	1,0	0,7	45	48	61	1	21.800	4840	VTX 1450 V
								0,9	0,6							NOOD crash
"	"	"	OFF	2.14	3,71	7373,79	"	0.9	0.6	45	55	42	1	21.802	4841	beams lost
								1								
"	"	OFF	ON	5,29	13,78	7387,57	"	1,4	0,9	41	50	156	5	21.800	4840	VTX OFF
"	"	ON	"	4,03	1.33	7388,90	"	1,2	0.8	40	52	13	0	21.802	4841	
"	"	"	"	3.39	9,36	7398,26	"	1.1	0,75	45	52	106	3	21.800	4840	
"	"	"	"	2,59	7,77	7406,03	"	0.9	0,7	49	53	88	2	21,800	4841	
"	"	"	"	2.06	0,53	7406,56	"	0,7	0,6	48	57	6	0	"	4840	beams lost
"	"	"	"	3,46	3,62	7410,18	"	1,1	0,8	42	22	41	0	21.800	4837	
"	"	OFF	"	2,42	7,24	7417,42	"	0.8	0,65	49	57	82	2	"	4837	VTX ON, 1475 V
"	"	"	"	1,75	5,39	7422,81	"	0,68	0,55	850	59	61	1	"		beams dumped
"	"	"	"	4,16	10,87	7433,68	"	1,2	0,9	44	52	123	2	21800	4834	
"	"	ON	"	2,81	8,75	7442,43	"	0,8	0,7	45	55	99	2	"	4835	
"	"	"	"	1,98	5,65	7448,08	"	0.6	0.6	48	58	64	4	"	4834	

Abort-150 and restart helps! Just now T.O. appears --- Voo Lala.

16[00] Naroska + Schmidt on shift

15[20] Gas check done: ok
16[30] temperatur alarm, NORD crash
16[55] beams lost

18[05] temperatur alarm given by a horn at the balcony. Experts called.
FADC crates off VTXC off.
SET-CAM → 777378
YSPY - BPCH off ALTER - BPCH - WIRESIDES - STATUS

2300 temparature at 15.2° with FADC crates on.
Readout reset, YSPY not yet reset.

24.6.85 Chrin, Kleinwort on shift
0[00]-1[20] Problems in Branch 2, Power pack in BR2 CR7 exchanged.
1[40] Fan unit in VTXC-HV-control in backpack exchanged
2[00] The new power pack in BR2 CR7 gave an 'overheat' alarm. We switched off the unit and placed 2 electrical fans at the back of the unit. After ten minutes we switched the unit back on. No alarms as yet. The fan are still left in ~~operation~~ position.
4[33] Jackpot! All 3 trip!
5[05] " " "
7[00] Standard Histograms displayed. Notice a spike in Jet chamber wire map (wire # ~~519~~ 510) and also a hole (wire # 149), will inform expert at a convenient hour (beams are to be dumped very shortly).

8[00] Barwig, Felst on shift
"no trigger bits" shows up quite frequently, trigger bit 29 missing
8[50] gas check done O.K.
11[00] power supply Br 2 Cr 1 exchanged, is now O.K., Krebiel working on the missing trigger bit
K-people informed about the fan on the roof not working, access only possible when PETRA off

12[30] trouble with Linac 2 magnet → 1500 A
temperatur alarm >19°, temperatur 2 broken (the service people from the factory come tuesday), VTX chamber crate switched off

13[28] PKR begin to ~~accelerate~~ inject beams. I call them to say that our magnet is down and ask when we can drive it back up again. They say immediately, so I start to increase current to 7500 A. ~~3694 but get no answer~~
B[45] Temperature alarm - I try calling 555, 3437, & 3694 but get no answer.

B[56] We start run 21541 without the Vertex chamber. I.e. the temperature is still high in the hardware room and we cannot get switch on the Vertex chamber camac. We shall continue to watch the temperature and see that the DL & crates do not cook. Herr Krelbiel managed to switch on the second compressor.

14[30] Spot lights repaired.
14[50] temperature seems stable at 18.7°C so we switch on the Vertex chamber again together with FADCs and change camac pattern and readout pattern back to the normal. Unfortunately we started a run with non-standard camac and readout pattern, so run 21582 is short.
16[00] Rauche & Warming ~~on shift~~
gas check ok
standard histograms O.K. except wire #149 ID still dead
Linac I problems, we have to keep their fill.
17[40] new fill ready → run lasted only 4 min 8 sec ?
18[30] next fill ready, looks good.
background gets worse, increasing number of Vtx-ch. trips. R.R. reduces Voltage to 1450V.
23:40 from TV: Linac I not ready!

The "NO TRIGGER BITS" Error was most likely due to an imperfectly attached flat-cable connector in the Trigger-Bits Readout. A new connector to the old cable seems to have cured the problem

25.6.85
00:[00] Hagemann a Chrin on shift.

0[08] Gas check done

4[34] VTXC Hardtrip, ID + ZC soft
5[08] " , ID soft + hole # 149
6[11] Standard histograms show strange wire (# 510) in JETC
6[15] 6[16] JDAS Readout Error 33 - missing CAM br. 6 Cr. 5 : ID ring 3 > pi
6[30] VTXC hard, ID soft trip
6[39] IBM hangs over 82 → try link again → o.k.
7[30] beams dumped early. ~~Petra started 2 shifts, change of see boards~~.
try to get a new fill before machine studies begin.

RUN	DATE	START	STOP	AT RUN START I^+	AT RUN START I^-	DEAD TIME (%)	TIME (sec)	RECORDS IN	RECORDS OUT	ALL $*10^6$	TØ REJ $*10^6$	T_1 ACC SUM	T_2 ACC SUM	T_1 Bit 2 E_{cl} 766 GeV	T_2 Bit 17 $2T \cdot E_{cl} > 2/3 E$
21536	24/6/85	07:15	7:31	3,28	2,87	12.0	948	2054	914	246	29	1192	1459	290	3
21537	"	08:11	09:02	4.81	4,43	13.7	9449	7581	4030	791	109	4017	5404	956	19
21538	"	9 54	10 49	6.10	5.74	22.2	2608	8002	4623	678	150	4548 3444	4826	982	23
21539	"	10 51	11 30	4.67	4.75	17.6	2306	6982	2932	600	106	3212	4191	850	20
21540	"	11 33	11 51	4.11	4.19	15.8	1056	2689	1312	275	44	1469	1911	369	9
21541	"	13 57	14 47	5.57	6.39	13.1	2999	8002	4086	781	102	4326	6034	1154	34
21542			jamk					55	31					1100 247	
21543	"	14 53	15 48	4.13	4.29	14.0	3272	8002	3815	851	119	4422	5786		26
21544	"	15 48	16 48	3.31	3.48	12.4	3593	8002	3638	935	116	4666	5872	1127	31
21545	"	16 49	17 03	2.64	2.79	11.6	1102	2454	1088	287	33	1459	1788	340	7
21546	"	17 17	17 52	5.89	5.97	30.3	248	767	421	64	20	358	492	89	5
21547	"	18 30	19 17	6.16	6.02	26.4	2779	8002	4530	723	191	4062	5896	1162	35
21548	"	19 18	1951	4.76	4.76	20.7	1932	5496	2896	503	104	2813	4002	768	19
21549	"	19:51	20:37	4.08	4.10	16.2	2567	6870	3576	667	108	3875	4457	995	18
21550	"	21:04	21:52	6.12	6.22	26.6	2781	8001	4899	723	193	3870	5749	1072	30
21551	"	21:53	22:42	4.82	4.92	18.3	2968	8002	4118	772	141	4237	5792	1148	33
21552	"	22:43	23:03	3.88	3.97	25.6	729	1997	1133	189	48	1230	1170	243	5
21553	25/6/85	02:53	3:47	5.21	4.99	15.9	3198	8001	3860	832	132	3867	6045	930	27
21554	"	3:48	4:51	4.11	4.34	12.4	3462	8001	3499	901	112	4367	5638	1105	14
21555	"	4:51	5:25	3,52	3,55	13,4	1760	3902	1658	458	61	2194	2805	540	11
21556	"	6:00	6:54	5,69	5,73	15.7	3010	8001	3952	783	123	4058	5683	1064	24
21557	"	6:54	7:24	4,60	4,96	14,3	1758	4583	2179	457	65	2517	3280	689	14
21558	"	17:16	18:14	4,38	5,00	13,7	3391	8002	3636	882	120	4194	5899	1166	28
21559	"	18:15	19:16	3.71	4.40	13.3	3565	8001	3551	927	123	4363	5818	1213	17
21560	"	19:16	20:23	3,22	3,88	11,8	3973	8001	3246	1034	122	4579	6099	1233	23
21561	"	20:24	20:37	2.80	3,42	10,7	791	1608	679	206	22	883	1237	232	6
21562	"	21:22	22:09	6.14	6.31	17.9	2758	8002	3818	724	130	3814	5583	1145	27
21563	"	22:09	23:03	5,28	5,56	16,7	2946	8002	3821	766	128	4134	5687	1206	18
21564	26/6/85	23:03	00:13	4.50	4.80	13.9	3237	8002	3765	842	117	4422	5698	1324	16
21565	"	014	1 18	3.69	3.70	12.4	3214	6961	3030	836	104	4060	5003	1144	18
21566	"	2 08	2:57	5.94	5.90	16.9	2964	8002	3883	771	130	4002	5759	1121	19
21567															
21568	"	3:02	3:54	4.85	4.99	15.1	3111	8002	3701	809	122	4303	5677	1291	27
21569	"	3.55	4.49	4.31	4.46	13.7	3245	8002	3634	844	116	4353	5775	1314	23

PROCESSORS ON/OFF NSO	MIP	TOF	FAMP	$\langle L \rangle$ 10^{30} cm^{-2} s^{-1}	Bhabha $\int dt$ nb^{-1}	$\int L\,dt$ EXP. ENERGY	IBM/TAPE OUTPUT	AT RUN START ID (mA)	AT RUN START TOF (V)	ON LINE REJ. SUM MIPROC T_2 %	ON LINE REJ. NOKD-SO $T_1 \cdot T_2$ %	$\sum$ Bhabha	MH	E_{beam}	Mag. Field -1# Gauss	Remarks
ON	ON	ON	ON	1,65	1,77	7449,85	IBM	0.5	0.5	48	58	20	0	21.8	4835	beams dumped
"	"	"	"	3.06	9.10	7458,95	"	0,9	0,9	42	49	103	2	21.800	4836	trigger bit 29 missing in this run. Beams dumped.
"	"	"	"	4.02	10,6	7469,55	"	~1,2	~1	39	44	120	4	"	4837	VTXC HV=1450V
"	"	"	"	3.29	6.89	7476,44	"	1.2	0.8	42	53	78	2	21.802	4840	
"	"	"	"	2.86	3.36	7479,80	"	1.0	0.7	45	54	38	1	21.800	4841	Partial beam loss VTXC HV = 1475V Beams dumped
"	"	"	"	4.56	11.66	7491,46	"	1,5	1,2	42 +32	50	132	3	21.800	4838	No VTXC
								1,0	0,75							No data - - -
"	"	"	"	2.73	7.51	7498,87	"	1.0	0.70	46	54	85	1	"	4840	VTXC in HV = 1475 V
"	"	"	"	1,71	4.33	7503,30	"	0.8	0.60	50	57	49	2	21.802	4840	
"	"	"	"	1,29	1.41	7504,71	"	0.6	0.5	50	58	16	0	21.800	4841	Beams dumped
"	"	"	"	4.25	0.97	7505.68	"	1.4	1.4	32	49	11	0	21.802	4839	beams lost
"	"	"	"	3.76	8.75	7514.43	"	1.4	1.5	42	45	99	2	21.800	4840	
"	"	"	"	2.86	4.68	7519.11	"	~1.1	~1.3	42	50	53	3	"	"	VTXC HV=1400
"	"	"	"	1.90	5.57	7524.68	"	0.85	1.0	48	50	68	3	21.802	4840	VTXC HV=1475 Beams dumped
"	"	"	"	3.80	12.19	7536.87	"	1.6	1.4	39	48	138	2	21.800	4841	VTXC HV=1450
"	"	"	"	2.95	7.07	7543.94	"	1.2	1.2	44	51	80	5	"	"	- " -
"	"	"	"	1.53	0.97	7544.91	"	~	~	47	44	11	0	"	4838	- " - partial beam loss Beams dumped
"	"	"	"	3.51	11.75	7556.66	"	1.6	1.55	40	54	133	2	21.800	4836	VTXC HV mod to 1475V
"	"	"	"	2.64	8.75	7565.41	"	1.0	0.6	43	59	99	0	21.802	4837	
"	"	"	"	3.19	4.06	7569.47	"	0.7	0.5	47	60	46	1	"	4836	beams dumped.
"	"	"	"	3.84	12.01	7581.48	"	1,4	1,0	40	53	136	4	21.800	4835	
"	"	"	"	3.45	5,57	7587.05	"	1.0	0.8	44	55	63	1	21.802	4834	beams dumped.
"	"	"	"	3,42	10,87	7597,93	"	1.1	0.8	43	57	123	3	21.800	4834	VTXC HV=1475V
"	"	"	"	2.37	8.57	7606.50	"	0,8	0,6	46	59	97	1	21.800	4835	
"	"	"	"	1,86	5,61	7612.15	"	0.7	0.5	50	62	64	0	21.800	4837	
"	"	"	"	1,55	1,15	7613.30	"	0,6	0,42	48	63	13	0	21.802	4838	beams dumped
"	"	"	"	5.08	14.58	7627.88	"	1.6	1.1	37	53	165	0	21.800	4837	
"	"	"	"	4,26	12,19	7640,07	"	1.4	0.9	41	55	138	2	21.802	4839	
"	"	"	"	3.13	9.63	7649,70	"	1,05	0,75	45	55	109	3	21.800	4838	
"	"	"	"	2.13	5.12	7654.82	"	0,7	0,55	48	59	58	1	21.800	4837	Beams dumped
"	"	"	"	3.19	8.30	7663,12	"		1.35	40	54	94	4	21.800	4838	
								1,1	0,8	—	—	—	—	—	—	Run aborted during pedestal settings
"	"	"	"	1.77	4.66	7667,98	"	1,1	0,8	44	56	55	1	21.802	4837	
"	"	"	"	1.33	4.59	7672,57	"	1,0	0,7	45	57	52	0	21.800	4837	

25/06/85

8^{00} Kawagoe and Smolik on shift.
gas check OK
machine studies $8^{00} \rightsquigarrow 18^{00}$

15^{45} magnet switched on again 7500 A screen says first injection after short break

16^{00} Becker, Ambrus

18^{00} Gas check

19^{00} error "magnet fluctuations" continuously - but $\bar{I} = 7500$ A.
nominal value = 500 G (??) - reset to (4840 ± 20) G

19^{25} JDAS error 46 - MP 16 out of sequence

21^{21} HV err. LG 12/13

22^{30} VTX + ID trip

23^{12} VTX + ID soft trip

26.06.85

0^{00} DARVILL + Komamiya on shift

0^{00} VTX + ID trip

0^{20} soft trip + VTX hard trip

0^{34} Gas check done.

0^{40} VTX + ID trip

0^{57} VTX + ID soft trip

2^{00} New Beams ready VTX trip

2^{05} VTX trip data taking without VTX ch. ~ 600 events

2^{56} VTXC JETC & ZC trip Run 21567 still within its first few events, paused, but then terminated itself.

3^{01} Run 21568 started.

3^{27} YSPY ERROR ! JETC V345 for then DL85 NO HITS !!! - - - We look at the histograms and find a hole. Investigation of V345 shows the connector to T2 trigger is loose so we fix it and continue to watch it.

4^{10} We are now 2500 events into run 21569 and the JETC histogram shows the above fault to be cured!

5^{34} ID trip ⊕ VTX, Z-ch trip

6^{47} We have a new filling and are experiencing many ~~have~~ VTX chamber trips.

8^{15} Vertex chamber and ID trip.

7^{36} VTXC trip

8:00 Ehrin & Glasser difficulty getting beam

8:15 gas checked.

10:30 All 3 chambers Trip

11:05 Vtx + JD Trip

11:45 VTX + ID + BP trip

12:00 standard histogram of jet chamber shows wire 15 apparently dead (run 21575) in run 21565 it is partly there

1:30 continued BP trips; appear here

1;50 LG High voltage error comes regularly

16.00 Dieckmann, Narodka
Gas-check ok.

17:27 beams ready BP ch trip 17.31

18:29 Reload NORD Why? - its difficult to trace with this information !!

19:25 Reload Nord

21:10 A call to PKR results in a reduction of dead-time of 50%

27. 6. 85 0^{00} Diedrich & Kawagoe
Gas check ok

(1450V old value)

1^{00} VTX - Voltage set to standart-Value of 1475V Run # = 21589 IEVT = 5480

4^{13} New fill ready. Hard to switch on VTXC. Run start without VTXC.

7^{15} short break Problems with the cooling of the cavities (~ 1/2 h)

8:00 Hellenband & Lavrikainen

16:00 Hedge COKE GLASSER NO BEAM LINAC1 GUN TROUBLE - No estimate yet
GAS CHECK OK.
MAGNET RUN DOWN TO 500

17:40 BACK UP TO 7507

Desk meeting informs us that BP chamber must be raised at slow speed after 1200; 1300; → 1475; then back to normal speed

50's shift of Kawagoe

The celebration took place in front of the JADE and. Members of all 4-PETRA-Experiments were present ...

RUN	DATE	START	STOP	AT RUN START I+	AT RUN START I−	DEAD TIME [%]	TIME [sec]	RECORDS IN	RECORDS OUT	ALL *10⁶	TØ REJ. *10⁶	T1 ACC SUM	T2 ACC SUM	T1 BIT2 E(G)>6GeV	T2 BIT17 2T. E>22TR
21570	26/06/85	4:49	5:20	3.84	3.98	13.8	1816	4371	1959	473	65	2426	3154	637	12
21571	"	5:21	6:01	3.60	3.74	11.8	2136	4970	2209	571	67	2887	3514	832	15
21572	"	6:43	7:42	5.82	5.36	15.1	2961	8001	3829	771	117	4160	5604	1183	27
21573	"	7:43	7:50	4.40	4.52	22.6	270	663	333	70	16	369	444	107	4
21574	"	10.11	[illegible]	5.78	5.94	17.3	2912	8002	3998	758	131	4017	5793	1096	30
21575	"	11:14	12:09	4.19	5.05	16.0	3090	8002	3918	804	128	4301	5643	1306	29
21576	"	12:11	13:07	3.57	4.29	13.7	2347	5728	2696	611	883	3258	4005	967	17
21577	"	13.37	14:25	5.72	6.05	23.7	2841	8001	4177	740	175	4074	5816	1214	37
21578	"	14:36	15:12	5.12	5.06	18.0	2769	8002	4018	721	129	4265	5469	1288	31
21579	"	15:14	15:22	4.93	4.34	19.6	472	1239	612	122	24	654	833	194	5
21580	"	17.27	18:23	5.8	6.0	15.4	3030	8001	3969	790	122	4104	5960	1075	23
21582	"	19.09	19.12	5.94	5.79	13.1	152	494	254	39	5	257	306	70	0
21584	"	19.35	20:18	5.35	5.4	26.0	2578	8002	3568	670	174	3309	5728	997	26
21585	"	20.19	21.07	4.71	4.79	24.9	2902	8002	3492	754	188	3571	5554	1081	30
21586	"	21:08	22:08	4.12	4.20	13.9	3305	8002	3528	860	120	4444	5614	1342	33
21587	"	22:08	23:07	3.54	3.52	11.7	3478	7802	3309	905	106	4680	5387	1361	14
21588	27/6/85	23:38	0:23	6.21	6.31	19.6	2704	8001	3975	703	137	3929	5485	1185	20
21589	"	0:24	1:09	5.3	5.43	17.6	2720	8001	3887	707	124	4144	5507	1275	24
21590	"	1:10	2.02	4.56	4.77	14.4	3082	8002	3858	802	115	4526	5602	1326	21
21591	"	2:02	2:58	3.9	4.1	13.2	3340	8002	3750	868	114	4656	5635	1352	27
21592	"	2:58	3:18	3.34	3.53	12.0	1134	2643	1186	235	35	1651	1853	452	11
21593	"	4.17	5.05	6.03	6.1	18.8	2845	8002	4044	739	136	4112	5606	1224	85
21594	"	5:05	5.54	5.84	5.17	16.3	2938	8002	3975	763	124	4213	5490	1288	25
21595	"	5.55	6.47	4.31	4.56	13.7	3145	8002	3677	818	111	4495	5546	1272	26
21596	"	6.48	7.13	3.7	3.54	12.7	1465	3477	1552	380	48	2029	2415	607	10
21597	"	9.37	10.23	5.70	5.93	14.6	3117	8002	3803	870	118	4102	5663	1700	27
21598	"	10.24	11.17	4.51	5.15	13.8	3760	8002	3674	822	113	4283	5605	1263	31
21599	"	11.17	12.12	3.88	4.51	12.9	3288	8002	3698	855	108	4653	5477	1364	31
21600	"	12:13	12.27	3.33	3.91	12.4	814	1966	854	211	26	1111	1314	300	9
21601	"	12:31	12:45	3.76	3.73	11.7	795	1791	740	207	24	1039	1265	302	2
21602	27/6/85	13:38	14:25	5.99	5.95	17.4	2699	8002	4163	702	122	4162	5555	1214	24
21603	"	14:25	15:14	4.74	4.92	15.1	2879	8001	3943	749	113	4484	5564	1318	47
21604	"	15:15	15:38	3.99	4.18	14.6	1148	3055	1491	298	43	1695	2111	502	11
21605	"	18.09	18.46	5.71	5.98	15.6	2165	5806	2744	563	88	2837	4177	687	24

NSO	MIP	TOF	FAMP	<L> $10^{30}cm^{-2}s^{-1}$	Bhabha $\int L\,dt$ nb^{-1}	$\int L\,dt$ EXP. ENERGY	IBM/TAPE OUTPUT	AT RUN START ID [mA]	AT RUN START TOF [V]	ONLINE REJ SUM MIPROC T2 %	ONLINE REJ NORD-50 T1 T2 %	Σ Bhabha	MH	E BEAM	Mag Field −1k Gauss	REMARKS
ON	ON	ON	ON	0.88	1.59	7674.16	IBM	1.0	0.65	47	58	18	0	21.800	4837	
"	"	"	"	1.75	3.45	7677.61	"	0.9	0.57	48	58	39	1	21.802	4838	Beams dumped
"	"	"	"	3.99	12.01	7689,62	"	1,6	1,2	39	54	136	3	21.800	4837	
"	"	"	"	3.01	0.35	7689,97	"	1,0	0,7	46	53	4	0	21.800	4838	Beams lost
"	"	"	"	4.25	9.36	7699,33	"	1,5	0,95	39	52	106	2	21.800	4840	
"	"	"	"	3,02	9.28	7708,61	"	1,2	0.7	43	53	105	2	21.801	4842	Beams dumped
"	"	"	"	2.17	6.54	7715.15		1.0	0.6	46	55	74	1	21.900	4844	Beam dumped
"	"	"	"	4.4	13.25	7728,40	"	1,5	1.1	39	50	150	3	21.800	4844	
"	"	"	"	3.71	10.51	7738.91	"	1.4	0.9	41	52	119	2	21.800	4844	
"	"	"	"	3.01	1.59	7740.50	"	1.1	0.7	40	53	18	1	21.800	4845	Last beam
"	"	"	"	4.31	10.16	7750.66	"	1.4	0.9	42	52	115	4	21.8	4840	21581 empty: Beam loss during Pad count
"	"	"	"	4.64	1.15	7751.81	"	1.6	1.2	33	51	13	0	"	4840	21583 Nord hang up during Pad cl.
"	"	"	OFF	3.62	10.25	7762.06	"	2	1.25	31	58	116	3	"	4838	Since cl. 400 VTXC anode volt. 1450 V
"	"	"	ON	2.88	8.66	7771,72	"	2.0	1.0	32	59	98	1	"	4838	
"	"	"	"	2.57	8.66	7780.38	"	1.0	0.6	44	58	98	4	"	4838	
"	"	"	"	2.02	6.27	7786.65	"	0.8	0.5	48	59	71	2	"	4838	Beam dumped
"	"	"	"	4.95	10.65	7797,34	"	1.6	1.0	36	53	121	4	"	4838	
"	"	"	"	4.0	10.43	7807,77	"	1.4	0.8	38	54	118	2	"	4837	VTXC 1475 V ↓
"	"	"	"	3.25	8.92	7816,69	"	0.7	0.5	46	54	101	2	"	4837	
"	"	"	"	2.47	7.24	7823,93	"	0.6	0.5	47	55	82	3	"	4837	
"	"	"	"	1.96	2.74	7826,67	"	0.55	0.5	48	57	31	0	"	4837	Beams dumped
"	"	"	"	4.54	14.49	7841,16	"	1.5	0.9	33	51	164	3	"	4837	
"	"	"	"	4.03	10.42	7851,58	"	1.3	0.75	42	57	118	4	"	"	
"	"	"	"	3.12	9.26	7860,84	"	0.9	0.55	44	56	105	1	"	"	
"	"	"	"	2.43	4.42	7865.26	"	0.8	0.55	47	57	50	1	"	"	Beams dumped
"	"	"	"	4.60	12.37	7877.63	"	1.4	0.8	42	54	140	5	"	4838	
"	"	"	"	3.51	11.09	7888.72	"	1.2	0.7	42	56	117	1	"	"	
"	"	"	"	2.55	8.92	7897.64	"	1.0	0.60	46	56	101	2	"	4839	
"	"	"	"	2.31	1.86	7899.50	"	0.8	0.5	44	59	21	0	"	4841	
"	"	"	"	1.98	1.50	7901.0	"	0.8	0.5	47	61	17	1	"	4840	beams dumped
"	"	"	"	4.68	13.70	7914.7	"	1.5	1.0	39	50	155	3	"	4842	
"	"	"	"	3.52	10.87	7925.57	"	1.2	0.8	44	52	123	6	"	4842	
"	"	"	"	2.74	2.74	7928.31	"	1.1	0.6	45	54	31	1	"	4844	Ebeam lost
"	"	"	"	4.63	9.28	7937.59	"	0.9	1.6	37	55	103	3	"	4841	BEAM LOST. VTXC at 1450 V

16:40 Run = 21605 Trigger: 2400 VTXCH Anode voltage down to 1450 V/Str
2302 IBM LINK dropped - reestablished
* During Run 21611 attempted to set VTXCH to 1475V but HV tripped off. Do reset to 1450 *

28.6.85

0⁰⁰ L. Becker and H. Rieseberg onshift. $\int L dt$ (27. June) = 183 nb⁻¹ the best value since May, 24th.

0¹⁰ Gas check
0³⁵ New filling is ready, Start Run # 21612
0⁴⁸ VTXC trip, again 153
3.58 Stop for beam dump
4²³ New filling ready, Start Run # 21616
Many VTXC soft trips. Q_0 is just at the alarm threshold
5⁴⁵ As there are so many VTXC trips that the chamber is off most of the time, we reduced the VTXC Anode voltage to 1400 V. Run 21617, event ~ 4000
7¹⁰ Anode voltage increase to 1450V: Run 21619
7³⁰ Beams lost
SHORT BREAK 70.7 nb⁻¹ this shift.

8⁰⁰ Arich and Febt on shift
8³⁰ From the investigating VTX Chamber without beam
Flayer => 500A.
10³⁰ PETRA shows still "short break", reason: vacuum leak at the beam-transport-line
takes another 30 min PKR says
13⁰⁰ Several attempts to ramp beams result in failur

13³⁰ beam ready. Running with modified ZREAD (in case of VTXC-Softtrip with changing readout-problem: switch off VTXC-Processor Trigger-accept-flag) C.K.

14⁰⁵ VTX-chamber soft trip, with Nord hang up, Run summary lost

15⁴⁵ suddenly lifetime of beam ≃ 15 min, run stopped, PETRA can't refill in the next 2 hours due to work going on at the synchrotron

16.00 Ebsen, Weber

16.33 Run 21623 stopped to turn on FAMP
16.54 R. Febt called to inform us that the synchrotron is down, because people are working on DESY II (Landrock); I ~~tele~~ call the PKR to ask whether this is true: Kaiser confirms that the vacuum people are trying to find a leak in the DESY II vacuum system; try to call Janecke: he is not there; Voss does not answer the phone either - in view of the fact, that there will be a 3 weeks PETRA shut down starting on Monday July 1, the above procedure is not acceptable.
17¹⁰ Gas check done, ok
17²⁵ call from Kaiser: work on synchrotron being finished. Refill in ~ 20 min.
19²⁰ BP-chamber HV-trip. Retiming LAM for BP-CH.
Pause run after getting no more triggers. Console reports N50 memory out of range.
Continue and STOP run. No run summary. Start next run. N50 does not increment event no. STOP run. Reload NORD. ABORT-N50. Start next run. Now ok.
23¹⁵ Difficulty with the VTX-chamber: It keeps tripping. We start run 21631 nevertheless
0²⁰ had to lower VTX-chamber voltage to 1450 (in accordance with R. Raucher). The ID-anode current is 2μA which is too much for the VTX-chamber. *
29.6. 0⁰⁰ Dieckmann, Schneekloth
0¹⁰ gas check done.
* The last VTX-chamber caused a crash of the N50-progr. (illegal instruction).
Restart N10, ABort-N50, and start run.
VTXC-voltage back to 1475 V.
1⁰⁰ VTXC Trip many times hang LAM Br. 1 Cr. 1. + Dead time rising to 70%
after 1 minute Dead time goes down again to about 10%
3³⁰ new fill ready, started run 21636, frequent VTX.CH. trips, current limit (I_{ID} = 1,6 μA)
NORD hang up: VTXC Trip → NO TRIGGERS Pause/Cont. doesn't help.
Stat new Run also ID Trip Nord can't get past the pedestal Events → hang up. (RUN 21637)
4⁰⁰ frequent VTX.CH. trips and READOUT ERROR 33 - hissing LAM Br. 1 Cr. 1, bpch.
4³⁰ run 21639 VTX. CH. again reduced to 1450V
5³⁰ 21640 " back to 1475 V
5⁵⁹ Z. chamber Trip then many missing lam from VTX Ch. → ~~Nord hang up~~
No Triggers Pause/Cont. doesn't work. Run Stop Run Summary lost (21641)
Nord hang up. → Reload
21642 only Pedestal ev.
7²⁴ VTXC Trip Pause/Continue → System Console N50 Ill. Instr. Batch Job aborted
Reload Nord. This time I didn't forget the FAMP!

RUN	DATE	START	STOP	AT RUN START I+	AT RUN START I−	DEAD TIME (%)	TIME (SEC)	RECORDS IN	RECORDS OUT	ALL *10⁶	T∅ REJ. *10⁶	T1 ACC SUM	T2 ACC SUM	T1 Bit 2 E_Lo>6 GeV	T2 Bit 17 2T·E_A·≥2τ	REMARKS
21606	27/6/85	19 14	19 22	5.99	6.34	11.5	136	427	210	35	41	205	282	38	2	VTXC at 1450V
21607	"	20 03	20 55	5 89	5.44	17.9	3037	8002	3905	790	141	3993	5732	1051	35	BEAM LOST
21608	"	20 55	21 49	5.02	4.67	15,2	3083	8002	3770	802	121	4274	5703	1251	35	
21609	"	21:50	21:50	4.27	3.98	VERY	SHORT	RUN		*						Beam lost
21610	"	22 50	2322	6.17	6.15	20,5	1914	5766	2799	448	103	2630	3976	693	19	
21611	"	2323	2352	5.47	5.55	20.7	1662	4687	2370	432	89	2323	3305	673	16	
21612	28.6.85	0.39	1.26	6.21	6.17	21.3	2850	8002	4023	741	158	3876	5691	1081	27	
21613	"	1:27	2:18	5.22	5.33	19.3	3017	8002	4025	785	152	4182	5584	1275	17	
21614	"	2:18	3:12	4.44	4.57	14.0	3192	8002	3730	831	117	4395	5640	1295	26	
21615	"	3:12	3:58	3.80	3.93	12.9	2704	6397	2847	704	91	3679	4493	1077	24	
21616	"	4:28	5:23	6.19	6.04	20.5	2825	8002	3998	736	151	4168	5749	1268	21	Beams dumped
21617	"	5:25	6:18	5.07	5.03	15.6	2862	8002	3918	744	116	4305	5811	1381	29	Many VTX trips
21618	"	6:13	7:07	4.28	4.31	14.1	3189	8001	3789	830	117	4517	5753	1367	26	Anode voltage 1450 → 1400 V
21619	"	7:07	7:31	3.63	3.69	12.3	1394	3223	1429	362	44	1857	2305	522	16	
21620	"	13.30		5.98	6.11	15.9	5901		2821							Anode voltage → 1450V (Beams lost) VTXC 1435 V
21621	"	14 10	14 59	5.02	5.49	14.8	2950	8002	3832	767	113	4214	5541	1203	22	Hard Ring up, no Beam Steering
21622	"	15 00	15 44	4.37	4.81	14.0	2566	6670	3736	667	93	3670	4663	1103	14	
21623	"	15 51	16 33	2.33	2.81	11.0	2623	5280	2213	682	75	3181	3911	888	14	
21624	"	16 36	17:45	2.33	2.81	10.4	4086	8002	3144	1063	110	5014	5716	1446	16	Stopped to turn on FAMP
21625	"	17 45	17:51	2.00	2.43	10.3	350	684	264	86	8.8	427	456	126	2	Beam dumped
21626	"	18 56	19 27	5.72	5.21	18.2										N
21627	"				6	pedestal	events									Noise hang-up
21628	"	19 57	20 25	5.07	5.12	15.4	2865	8002	3920	746	115	4353	5418	1345	22	
21629	"	20 25	21 18	4.37	4.41	14.3	3121	8002	3787	811	116	4458	5645	1432	25	
21630	"	21 18	21 59	3.74	3.78	13.0	2459	5939	2637	634	85	3362	4246	1002	26	
21631	"	2315	2342													run summary lost NSO hang-up
21632	29.6.85	0.02	0.52	4.92	4.94	18.8	2930	8002	3790	763	143	4134	5573	1291	22	
21633	"	0:52	145	4.19	4.19	15.9	3151	8002	3665	820	130	4354	5572	1362	18	
21634	"	145	2 42	3.59	3.59	12.6	3375	8001	3430	878	111	4605	5609	1411	30	
21635	"	2 42	2 56	3.06	3.06	11.5	776	1675	741	202	23	989	1161	290	3	Beams dumped
21636	"	3:25	3 36	6.00	5.87	17.2	583	1784	895	152	26	880	1320	268	5	
21638	"	3 45	4:34	5.91	5.26	20.3	2841	8002	3941	739	150	4275	5700	1350	29	
21639	"	4:34	5 26	4.74	4.29	15.8	3008	8002	3861	782	123	4391	5575	1375	26	VTX CH. HV 1450V
21640	"	5 25	5 59	4.03	3.63	17.3	[illegible]	4193	1937							VTXC 1475 V
21643	"	6.06	6:34	3.57	3.21	14.1	1659	3952	1754	[illegible]	[illegible]	2258	2748	709	12	Beam dumped
21644	"	7:04	7:27	5.73	4.41	17.2		3094	1524							run Summary lost

PROCESSORS ON/OFF NSO	MIP	TOF	FAMP	⟨L⟩ 10^{30} cm^{-2}s^{-1}	Bhabha ∫Ldt nb^{-1}	∫Ldt EXP. ENERGY	IBM TAPE OUTPUT	AT RUN START ID (MA)	AT RUN START TOF (V)	ON LINE REJ. SUM MIPROC T1 (%)	ON LINE REJ. NORD-SO T1 & T2 (%)	Σ BHABHA	MH	E BEAM	MAG. FIELD 1*KGAUSS	REMARKS
ON	ON	ON	ON	5.93	0.27	7937.86	IBM	1.8	1.1	29	53	3	0	21.800	4841	
"	"	"	"	4.64	13.52	7951.38	"	1.6	0.9	39	53	153	6	21.800	4841	
"	"	"	"	3.62	11.13	7962.51	"	1.2	0.7	42	55	126	4	—"—	4842	
"	"	"	"				"							—"—		Beam lost
ON	ON	ON	ON	5.46	8.30	7970.81	IBM	1.6	0.9	35	52	94	2	21800	4840	
"	"	"	"	4.71	4.68	7975.49	"	1.7	0.8	40	52	53	3	21800	7941	Beam lost
"	"	"	"	4.94	13.78	7989.27	"	1.6	1.0	36	52	156	3	0	4840	
"	"	"	"	3.86	10.60	7999.87	"	1.4	0.8	41	52	120	4	"	4841	
"	"	"	"	2.90	7.16	8007.03	"	1.1	0.6	44	56	81	2	"	4841	
"	"	"	"	2.25	5.30	8012.30	"	0.9	0.55	46	57	60	1	21.802	4841	Beams dumped
"	"	"	"	4.57	12.10	8024.40	"	1.6	1.0	38	54	137	7	"	4839	Many VTX trips
"	"	"	"	3.57	10.60	8035.00	"	1.3	0.85	42	53	120	3	"	4840	Anode voltage 1450 → 1400 V
"	"	"	"	2.70	8.48	8043.48	"	1.1	0.7	47	55	96	1	21.800	4838	
"	"	"	"	2.26	2.65	8046.13	"	0.9	0.6	47	58	30	2	"	4838	
"	"	"	OFF	5.5	11.63	8057.76	"	1.5	1.1					"	4853	Hard Ring up, no Beam Steering
"	"	"	"	4.46	12.37	8070.13	"	1.3	0.9	40	54	140	2	"	4856	
"	"	"	"	3.54	6.88	8077.11	"	1.1	0.7	45	55	79	4	"	4857	
"	"	"	"	1.36	2.83	8079.94	"	0.7	0.5	51	60	32	0	"	4844	Stopped to turn on FAMP
"	"	"	ON	1.08	4.42	8084.36	"	0.6	0.4	53	63	42	1	"	4841	
"	"	"	ON	0.96	0.32	8084.68	"	0.4	0.4	51	64	6	0	"	4837	Beam dumped
"	"	"	"	5.05	8.8	8093.48	"	1.4	0.9						4839	N
																Noise hang-up
"	"	"	OFF	3.86	11.07	8104.55	"	1.3	0.9	42	54	122	2	"	4841	
"	"	"	OFF	2.99	9.32	8113.87	"	1.1	0.8	45	55	90	4	21.802	4839	
"	"	"	ON	2.35	4.33	8118.20	"	0.9	0.7	46	58	49	2	"	4838	
																run summary lost NSO hang-up
"	"	"	OFF	3.64	9.81	8128.01	"	1.4	0.8	38	55	111	0	"	4841	
"	"	"	ON	2.67	7.51	8135.52	"	1.2	0.7	42	57	85	6	"	4839	
"	"	"	"	2.06	5.57	8141.09	"	1.0	0.6	46	59	63	0	"	"	
"	"	"	"	1.80	1.15	8142.24	"	0.8	0.5	48	58	13	0	"	4840	Beams dumped
"	"	"	"	5.46	2.65	8144.89	"	1.8	1.2	35	51	30	0	"	4840	
"	"	"	OFF	3.75	12.19	8157.08	"	1.3	0.7	39	52	138	1	"	4839	
"	"	"	ON	2.67	8.22	8165.30	"	1.3	0.7	43	54	93	3	"	4838	VTX CH. HV 1450V
"	"	"	"					1.0	0.6							VTXC 1475 V
"	"	"	"	1.62	3.71	8169.01	"	1.0	0.6	47	58	42	0	"	4838	Beam dumped
"	"	"	"					1.2	0.9					"	4839	run Summary lost

29/6/85 8^{00} Magnussen, Bethke on shift.

8^{15} Gas check done

10^{000} New fill. Now we get ~ 10...15 Missing lam after each VTX soft trip, then it is possible to run again. Noticed that IBM-PC hung up.
~~Run~~ VTX stable only for few seconds

13^{45} VTX-trip, Nord 50 error, illegal instruction, batch job aborted.
No data taking possible, so stop run ("run summary lost"), Reload Nord, Start run 21653, ok now! (But again, many missing LAM bx 1/ex1.). Forget to switch on FAMP, so do it after this run

16^{00} Darvill & Schmidt on shift.

16^{10} Gas check done. O.K.

16^{40} On the recommendation of the last shift we reload the Nord 50 at the end of run ~~21655~~ 21655
We now have the display working again. We did remember to switch on the FAMP!

18^{00} Nord 50 error memory out of range at 777775 run summary lost

19^{10} From the beginning of this filling we were unable to keep the VTXC at high voltage: therefore we call Ramcke and he tells us to decrease to 1450V.

19^{44} Std Histograms drawn. Forward counter mean TDC four channels missing also JETC mean hits per wire channel 16 bins

20^{14} We stopped the run so if we can turn the VTXC at nominal voltage. Now 1475 HV

30/6/85

0:00 Stephens & Ramcke on shift

0:40 Gas check o.k.

4.30 Z ch trip (no VTXC-trip) Nord hang-up Restart N10 Abort N50 restart FAMP

6.10 JDAS ERROR 45 MP-16 analytes incomplete YY=1 (several times)

N.B. Keep an eye on the timing, pickup and Landau histograms -.. Hey Rose been somewhat erratic during the runs.

8:00 Glessner & Hedgecock

8:15 New run Nord stopped taking events PAUSE-CONT did nothing, STOP then start didn't work either (~145 events)
Nord 50 looks dead. Reloaded Nord-50 "NORD 50 cannot be started" had to switched off N10 & restart.

8:54 N50 BUSY COMES ON SCREEN. ABORT N50 & RESTART RUN
Run 21678 — VTXCH RUN HT UP TO 1475.

Nord appears to crash when VTX chamber trips - Not every trip, but every crash (6/3) Also with the NO EVENTS which PAUSE/CONT fixes

10^{41} — NO TRIGGERS PAUSE/CONTINUE →
12:05 New FAMP program loaded
14:31 Magnet current down to 500
15^{20} Magnet back up
15:43 new fill
BP stop then errors and now data taking : DMA Timeout Bit 2 Exakl latches
" 2 trigger TOC T1 Run summary lost

16^{00} VXC soft trip followed by Nord hangup. Reload Nord: everything seems OK, but start run does not work — "IBM" event no does not clear and run hangs after a couple of events. Vertex chamber trips again while we are looking at this mess.

16^{00} Cartwright & Kanagre on shift. (16^{30} Gas check done)

16^{15} Rebuild ZMONX under instructions from Jan Olsson and try to start a run, but after 65 events or so it dies with OUTSIDE SEGMENT BOUNDS on console, Jan will come in — READ JDAS MANUAL - Section 4
Discover Peter was reloading FAMP & I had it ON — so try again. Run with no output gets to 150 triggers without problems. Run with output to IBM (run 21686) still produces OUTSIDE SEGMENT BOUNDS error, but continues to take data — leave it going.

16^{40} MP-16 out of sequence. (Still running — one NO TRIGGERS cured by pause/continue)

16^{50} All still seems well, so stop to switch on FAMP. Run 21687 promptly dies after pedestals without taking a single data event. Run without output works. Scratch head, try again — run 21688 works OK (now - 16^{54} - has 1300 triggers). FAMP apparently OK.
Jan arrives (I apologise for fact that data-taking hangup was not genuine) diagnoses faulty link as YMAGNT and says he will rebuild it after beams we dumped.

18^{00} No Triggers — Pause/continue doesn't help. Starting new run does.

18^{20} Repeated No TRIGGERS over last 20 minutes, all (so far) respond to pause/continue.

RUN	DATE	START	STOP	AT RUN START I^+	AT RUN START I^-	DEAD TIME (%)	TIME (sec)	Records IN	Records OUT	ALL $\times 10^6$	TØ REJ $\times 10^6$	T_1 ACC SUM	T_2 ACC SUM	T_1 BIT 2 $E_{LG} > 6$ GeV	T_2 BIT 17 $2T \cdot E_T > 2TR$
21645	29.6.85	7^{32}	8^{25}	5.27	3.83	15.7	3149	8002	3697	819	128	4418	5647	1380	26
21646	"	8^{25}	9^{27}	4.50	3.01	13.7	3334	8001	3549	868	119	4653	5623	1367	76
21647	"	9:22	9:22	3.86	2.52	14.0	20	87	40	5.3	0.7	41	43	6	0
21648	"	9:59	10:51	5.39	5.93	27.6	3095	8002	4127	805	222	4050	5849	1252	27
21649	"	10:51	11:40	5.00	4.64	17.8	2892	8002	3938	752	134	4220	5751	1276	23
21650	"	11:40	12:36	4.28	3.94	18.7	3338	8002	3820	868	162	4541	5736	1375	17
21651	"	12:36	12:48	3.61	3.31	15.7	685	1697	790	178	28	988	1156	296	4
21652	"	13:38	13^{44}	5.61	4.69			354	155		run	summary	lost		
21653	"	13:51	14^{40}	5.42	4.49	16.6	2919	8002	3908	759	126	4223	5688	1247	27
21654	"	14:41	15:36	4.64	3.73	15.6	3228	8002	3747	840	131	4557	5667	1378	18
21655	"	15:36	16:32	3.85	3.13	13.1	3361	8002	3582	848	115	4676	5659	1382	28
21656	"	16:43	16:54	3.29	2.58	11.8	647	1481	649	168	20	907	1001	260	2
21657	"	run	summary	lost.				350							
21658	"	18:04	18:54	5.42	5.43	15.5	2868	8001	3815	746	115	4352	5883	1278	24
21659	"	18:55	18:48	4.62	4.58	16.8	3147	8002	3782	818	138	4507	5783	1415	18
21660	"	18:48	20:14	3.65	3.61	14.1	1511	3831	1758	393	56	2172	2701	647	11
21661	"	20:18	21:15	3.61	3.57	13.2	3434	8002	3591	893	118	4768	5650	1456	20
21662	"	NORD	HUNG	DURING	PARAMETER	SETTING	—	RUN	TERMINATED	—	NO	RUN	SUMMARY		
21663	"	21:17	21:47	3.07	3.04	12.0	1762	4064	1780	459	55	2466	2787	713	12
21664	"	23.47	0:20	5.73	5.74	19.3	1829	4686	2285	476	92	2334	3373	645	17
21665	30.6.85	0.24	1.20	4.14	4.31	12.6	3362	8002	3546	875	110	4606	5487	1409	13
21666	"	1.21	2.03	3.60	3.75	12.3	2535	5889	2532	660	81	3514	3956	1053	11
21667	"	2.05	2.59	3.25	3.39	13.1	3224	7112	2964	839	110	4382	4952	1346	18
21668	"	3.29	4.17	5.63	4.93	18.4	2888	8002	3976	751	138	4169	5552	1235	22
21669	"							run	summary	left.					
21670	"			garbage	runs.										
21671	"														
21672	"	4.43	5.37	4.50	3.87	14.4	3183	8001	3741	828	119	4510	5634	1312	37
21673	"	5.37	6.34	3.83	3.18	12.7	3427	8002	3529	891	113	4729	5637	1377	19
21674	"	6:35	7:33	3.27	2.70	11.8	3478	7725	3251	798	107	4675	5453	1358	26
21675	"	145	events	then	Nord	died		NSO	NOT	STARTED					
21676	"	08:38	08:40					133		FAMP		OFF	—		STOP
21677	"	8:47	9:15					2252	4523						STOP
21678	"	09:21	10^{14}	4.68	4.51	17.6	3074	8002	3878	800	141	4462	5476	1369	23

PROCESSORS ON/OFF NSO	MIP	TOF	FAMP	$\langle L \rangle$ 10^{30} cm^{-2} sec^{-1}	Bhabha $\int L dt$ nb^{-1}	$\int L dt$ EXP. ENERGY	IBM/TAPE OUTPUT	AT RUN START ID (μA)	AT RUN START TOF (V)	ONLINE REJ SUM MIPROC T_2 %	ONLINE REJ NORD-50 $T_1 T_2$ (%)	Σ Bhabha	MH	E_{beam}	Mag. Field +1x Gauss	REMARKS
ON	ON	ON	ON	2.66	7.69	8176.70	IBM			45	56	87	1	21.800	4840	
"	"	"	4	1.88	6.27	8182.97	"	0.9	0.7	48	58	71	3	"	4840	
"	"	"	4	2.32	0.0	8182.97	"	0.9	.6	42	70	—	—	"	4840	Beams lost
"	"	"	4	3.82	10.69	8193.66	"	1.5	1.2	40	50	121	6	"	4841	
"	"	"	"	3.04	6.98	8200.64	"	1.2	1.05	43	53	79	3	"	4841	
"	"	"	"	2.13	6.89	8207.53	"	1.1	0.75	47	55	78	2	"	7841	
"	"	"	"	1.88	0.88	8208.41	"	0.9	0.70	48	56	9	0	"	4841	Beams dumped
"	"	"	"		0.44	8208.85	"	1.3	0.8					"		Nord trouble
"	"	"	off	3.55	8.83	8217.68	"	1.2	0.8	42	54	100	3	21.800	4843	
"	"	"	on	2.50	7.42	8225.10	"	1.1	0.75	46	55	84	2	"	4843	
"	"	"	"	1.81	6.54	8231,64	"	0.7	0.7	48	57	74	1	21.802	4844	
"	"	"	"	1.44	0.97	8232.61	"	0.7	0.5	51	59	11	0	21.800	4843	Beams dumped
								1.5	1.2							Nord trouble
"	"	"	"	4.08	10,60	8243.21	"	1.4	1.1	43	52	120	2	21.802	4841	
"	"	"	"	2.85	8,39	8251,60	"	1.2	0.9	45	54	95	3	"	"	VTXC to 1450V at 19:08
"	"	"	"	2.15	4,15	8255,75	"	1,0	0,75	46	56	47	1	21.802	4842	"
"	"	"	"	1.86	5.30	8261,05	"			49	57	60	3	21,802	4840	VTXC to 1475V
							"	0,8	0,55							
"	"	"	"	1,45	2,03	8263,08	"	0,8	0,55	49	58	23	0	21,800	4841	Beams dumped
"	"	"	"	4.86	8.22	8271,30	"	1,4	0.9	40	57	93	1	21.800	4841	VTXC + ID soft trip
"	"	"	"	2.85	7.95	8279,25	"	1.0	0.6	46	58	90	1	21.802	4840	
"	"	"	"	2.26	5.04	8284,29	"	0.9	0.5	47	59	57	0	21,800	4840	~~Room~~ ~~33~~ connected with [illegible]
"	"	"	4	1.71	5.04	8289,33	"	0.8	0.48	51	60	57	1	21,802	4841	beam dump.
"	"	"	4	3.44	10.78	8300,11	"	1.3	1.1	41	53	122	0	21.800	4839	
								1.1	0.88							Z ch trip NORD hangup.
				~	1.0	8301,11										"
																"
"	"	"	"	2.28	5.92	8307.03	"	1.0	0.8	46	56	47	1	21.800	4839	
"	"	"	"	1.74	4.77	8311.80	"	0.8	0.7	49	58	54	3	21.802	4839	
"	"	"	"	1.27	3.27	8315.07	"	0.6	0.52	50	60	27	2	21.800	4839	beams dumped
						?										VTXC HV = 1450
SWITCH		ON.			.44	8315.51										NSO CRASH RUN SUM. LOST.
					5.27	8315.78										VTXC HV = 1475
ON	ON	ON	ON	2.91	8.13	8323.91	IBM	1.2	0.85	44	54	92	1	21800	4840	

19⁰⁰ Try to rebuild YMAGNT. Fail. Call Harald – discover that though task is YMAGNT file is YMAGNET. Rebuild. Am advised that "NSO crash with VK trip" syndrome may be result of changes to ZLEEP made on Friday by Kleinwort, in which case they should, we think, have been cured by my rebuilding of ZMONX earlier. Wait and see...

20²⁸ VXC reset to 1475V. Would have done it earlier, but instructions from previous shift not clear. Procedure is: (on rackunit VXC control)
Press STOP – black button, between ON & OFF
Switch from LOCK to EN
" " IST to SOLL
Use UP – DOWN to adjust volts
Switch to IST
Switch to LOCK
Switch speed to dead slow
Press ON

20³⁷ Missing LAM br 2 cr 4 TOF cts
20⁵² MB16 out of sequence (again 2180)

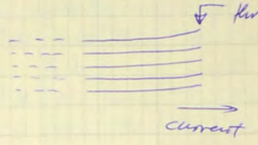
23⁴⁷ Immediate VXC soft trip when starting up with new fill. After 3 or 4 tries eventually give up & set it to 1480V.

July 1st

That means the first half of 1985 is gone by now

0⁰⁰ Stand & Warning on shift
0²³ IBM transfer error S2 subst 000000, try link again, OK now
0³⁵ IDAS readout error 46 – MB-16 out of sequence: YY=1
gas check OK
1¹⁰ Vtx ch back to 1475V.
3⁴⁰ very good beam conditions, but x4 hours after last fill beams are down to well below 3 mA. I expect a quick refill with similar conditions
In view of the remaining only 3 hours before the start of the shutdown I phone Mark J to ask for a new fill. They agree, beams are dumped 2 min. later.
4¹⁵ new fill ready
start run, vtx-ch at 1450 Volts
4⁴⁴ "IBM busy" comes up frequently → causes high dead time

1/7/85

4⁴⁵ start run 21702, Vtx ch now at 1475 V again
4⁵² Vtx ch trip
after Vtx ch reincorporated into readout we have readout error 74 wrong LAM br 1 cr 1
immediately afterwards another Vtx ch trip, so we decide to continue to run at 1480V again
even at 1480 V Vtx ch. trips at regular intervals, always Q1 soft trip
current diagram in rackrack looks like this


have reduced voltage further to 1435V until beam is better
5⁴⁰ just at run end NORD gives up again
message "run summary saving" on the screen flickering
2x "TRANSF !!" on the line printer
Nord does not react to any key of the command console
at disk drive the FAULT light is on
we phone Jan Olsen for advice → Masterclear, disc off, reset fault light, disc on again.
back to NORD: Masterclear, Load
after this sequence the disc fault light is on again and the Nord does not show any sign of life.
Jan concludes it is a serious disc fault, he will come in later

5:57 ~~6⁰⁰~~ PETRA announces End of Luminosity Run at 6⁰⁰
we run down all ch. HV and run down the magnet to Zero Amps.
7⁴⁰ μ-ch HV turned off PWA.
7⁵⁰ Ethan switched off, chambers are flushed with pure Argon now.
8²⁰ Disc reset and run up again, loads without problem. Made backup of system disc. J.O.
Dump IBM Online disc. Regenerate system done.
10⁰⁰ Dish transfer once again: It is suggested by Ute Teiche that this is due to voltage fluctuations on the net, maybe from magnet switching or other hard work. We put system disc in the old drive, which is not so sensitive as the new blue one. It shall stay there for the next three weeks J.O.

11³⁵ VTXC high voltage test, ~~HV has to stay on~~

SHUT DOWN. Repair of Tasso Magnet 1. ÷ 12. July 1985

10/7-85 20³⁰ New Formatter (from Nord II) installed: Tapetest program run, everything seems to work! J.O.
11/7-85 13⁰⁰ gas check OK PWA
11/7-85 18⁰⁰ Reset Camac Clock. It was wrong by 4 hours, for unknown reasons, since yesterday J.O.
19⁰⁰ gas check OK PWA
21⁰⁰ System rebuilt in NORD J.O.

RUN	DATE	START	STOP	AT RUN START I+	AT RUN START I−	DEAD TIME %	TIME (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	TO REJ ×10⁶	T1 Acc SUM	T2 Acc SUM	T1 BIT 2 E_LG > 6 GeV	T2 BIT 7 2T.E_LG > 2 TR
21679	30/6/85	10 13	11 08	3.97	3.84	14.4	3194	8001	3611	831	120	4618	5496	137	26
21680	"	11 08	11 13	3.39	3.88	13.0	- 297	809	- 369	77	10	462	513	134	981
21681	"	11 19	12 03	3.28	3.18	12.7	2613	6019	2662	677	86	3378	4180	1056	11
21682	"	12:38	12:57	5.91	5.65	27.2	1043	2948	1414	271	75	3662	2032	100	12
21683	"	15:47		5.70	5.91				445	113	37	433	768		
21684	685	JUNK	—	Problems with readout											
21686	30/6/85	16 23	16 46	3.79	5.45	14.9	~~3529~~ 1379	~~1557~~ 3559	1557	359	54	1808	2885	541	6
21687		JUNK	—	died after LG pedestals											
21688	"	16 50	17 46	3.54	5.14	14.9	3346	8002	3583	870	130	4423	5622	1326	21
21689	"	17 47	18 03	3.09	4.58	13.5	~~2239~~	2239	935	241	33	1292	1499	391	2
21690	"	18 24	18 49	2.96	4.43	13.5	2622	6927	2416	682	92	3675	3970	1052	13
21691	"	19 22	20 11	5.33	5.87	21.0	2949	8002	3782	767	161	4054	5509	1270	25
21692	"	20 12	20 19	4.57	5.03	19.3	427	1162	547	111	21	602	789	190	5
21693	"	20 22	21 16	4.43	4.88	16.1	3123	8002	3651	812	131	4467	5443	1419	18
21694	"	21 16	22 11	3.84	4.24	13.7	3319	8002	3400	864	118	4658	5334	1507	14
21695	"	22 11	23 01	3.35	3.71	12.5	2937	6803	2804	764	95	451	4469	1311	17
21696	"	23 50	0 51	5.75	5.79	21.0	2918	8002	3900	760	159	4157	5620	1316	18
21 ~~697~~	1/7/85	0 51	1 40	4.80	4.61	16.6	2902	8001	3835	755	125	4426	5462	1423	27
21698	"	1 40	2 32	4.12	3.93	15.0	3121	8002	3741	812	122	4541	5480	1432	22
21699	"	2 33	3 30	3.54	3.37	13.1	3414	8001	3554	888	116	4768	5592	1473	12
21 ~~700~~	"	3 30	5 47	3.03	2.88	14.4	976	2271	1021	254	36	1378	1541	435	1
21701	"	4 20	4 50	5.87	5.61	27.3	1767	4687	2379	460	126	2311	3289	695	19
21702	"	4 49	5 37	5.27	4.90	18.8	?	8001	3941	742	140	4338	5647	1352	?
21705	13/7/85	23 19	23 44	3.24	3.94	12.1	1345	3276	1517	350	42	1664	2549	562	14
21706	14/7/85	00 55	0 28	2.21	3.36	11.2	190	432	177	47	5	240	264	60	0
21707	"	0 51	0 41	2.17	3.32	11.4	574	1275	580	149	16	692	894	42	4
21708	"	4 09	4 20	4.28	3.92	21.3	633	1610	787	165	35	740	1226	252	5
21709	"	5 42	5 55	4.42	4.30	19.6	734	1950	935	191	37	902	1380	294	4
21710	"				NORD hang up after a few events										
21711	"	19 27	19 55	3.97	4.05	20.5	815	2090	1133	212	43.5	995	1701	346	15
21712	"	23 19	0 08	4.17	4.23	20.1	2674	6875	3318	695	139	3392	5298	1128	23
21713	15/7/85	2 51	3 43	4.29	4.41	22.8 3158 →		8001	4083	822	187	3874	6103	1404	29
21714	"	3 44	4 39	3.65	3.77	16.7	3308	8001	3976	860	143	4244	5926	1387	22
21715	"	4 40	4 47	3 11	3.22	14.0	382	948	414	99.5	13.9	482	679	153	3

PRESCALE FACTORS N50	MTT	TOF	FAMP	⟨L⟩ 10³⁰ cm⁻²s⁻¹	Bhabha ∫L dt	∫L dt EXP. ENERGY	I BM MAG OUTPUT	AT RUN ID μA	START TOF (V)	ONLINE SUM MIPROC T2 %	NORD-50 T1 & T2	Σ Bhabha	MH	E BEAM	MAG. FIELD -1×GAUSS	Remarks
ON	ON	ON	ON	2.52	5.12	8329.03	ISM	1.0	0.7	46	57	58	1	21800	4841	VTX HV = 1475
"	"	"	"	1.66	0.53	8329.56	-"-	0.8	0.58	42	57	6	0	-"-	4842	
"	"	"	"	1.43	4.24	8333.80	-"-	0.8	0.50	48	58	48	3	21800	~~4841~~	Beams dumped
"	"	"	"	3.56	3.18	8336.98	-"-	1.6	1.0	35	53	36	0	21800	4840	BEAM LOST
					1.72	8338.70	"	1.6	0.9	46						Nord hangup after VXC trip
ON	ON	ON	~~OFF~~	2.71	3.89	8342.59	IBM 42	1.4	0.7	37	58	44	0	21.802	4841	Stopped to switch on FAMP
								1.32	0.6							
"	"	"	ON	2.40	7.86	8350.45	"	1.8	0.6	42	58	89	4	"	4841	Ended normally!!!
"	"	"	"	1.81	1.50	8351.95	"	1.1	0.5	46	61	17	0	"	4841	Hung up with No TRIGGERS
"	"	"	"	1.63	4.68	8356.63	"	1.0	0.5	45	61	53	1	"	4841	Beams dumped VTX HV=1450
"	"	"	"	3.76	9.19	8365.82	"	1.6	0.9	38	55	104	1	"	4840	
"	"	"	"	3.03	1.41	8367.23	"	1.3	0.7	40	56	16	1	"	4840	
"	"	"	"	2.88	7.77	8375.00	"	1.2	0.65	44	57	88	2	"	4840	Vertex chamber back to 1475V
"	"	"	"	2.18	5.92	8380.92	"	1.0	0.55	45	60	67	4	"	4841	
"	"	"	"	1.73	4.59	8385.51	"	0.9	0.45	48	61	52	0	"	4840	Beams dumped
"	"	"	"	4.06	9.72	8395.23	"	1.5 ~~1.6~~	0.95	41	54	110	2	21.802	4841	Vtch 1450
"	"	"	"	3.04	6.63	8401.86	"	1.2	0.85	42	54	75	2	21.800	4840	Vtch 1475 after 1°
"	"	"	"	2.17	6.89	8408.75	"	1.0	0.75	45	56	78	2	21.802	"	Vtch 1475
"	"	"	"	1.57	6.01	8414.76	"	0.85	0.65	49	58	68	5	21.800	"	-"-
"	"	"	"	1.33	0.80	8415.56	"	0.65	0.55	49	57	9	0	"	4841	-"- Beams dumped
"	"	"	"	3.84	7.24	8422.80		1.45	1.3	39	52	82	2	"	"	vtx ch 1450 V.
"	"	"	"	2.63	9.10	8431.90	"	1.3	1.1		50?	?	?	≈"	≈"	-"- 1435V NORD crashed Beams dumped
ON	ON	ON	ON	—	2.12	8434.02	"	1.2	1.0	42	56	24	0	21.800	4841	
"	"	"	"	—	0.09	8434.11	"			40	63	1	0	21.802	4843	
"	"	"	"	0.65	0.53	8434.64	"			44	57	6	0	21.800	4843	Beams dumped
"	"	"	"	2.34	1.41	8436.05	"	≈	1.3	42	54	16	3	"	4844	Beams lost
"	"	"	"	1.64	1.68	8437.73	"	1.65	1.4	40	55	19	0	"	4843	Beams dumped
				—	—	—	"	1.6	2.0					21802	4839	NORD hang up
ON	ON	ON	ON	1.72	1.24	8438.97	"	1.6	1.8	46	49	14	2	21.802	4838	BEAMS LOST
"	"	"	"	1.82	4.33	8443.40	"	1.65	1.5	43	54	49	1	21.800	4837	beam lost
"	"	"	"	1.91	6.54	8446.94	"	1.4	1.8	45	52	74	2	21.802	4834	
"	"	"	"	1.53	5.12	8452.06	"	1.1	0.9	47	53	58	3	21.802	4832	beams lost
"	"	"	"	1.12	0.53	8452.59	"	?	?	42	56	6	0	21.802	4831	↓

12.7.85

10^{30} Magnet on At 6200 A breaker switches off
13^{03} " at 7500 A 13^{17} Magnet off

16^{00} Cartwright & Naroska on shift
16^{25} Gas check done
18^{00} PETRA says INJECTION. No current yet though.
21^{40} PETRA tries to accelerate with ~4mA/beam. Gets to 13 GeV before losing half the e^+ and all the e^-.

2200 PLUTO are correcting all acceleration files one by one. That may last several hours.

13.7.85

0^{00} KADO MATSUMURA

0:20 Gas check done, ok.

13.7.85

8^{00} Kuhtiel Swolin on shift
8^{25} Beams up, ca 2e 4.5 mA, ToF rate 4 V, Unable to turn on Chambers. Beams soon lost
9^{55} Beam up again, ToF rate 4 Volts. Unable to turn on "
10^{10} Beams lost
Gas check done

12^{55} Funny effect with beam. It kicks every 5 seconds (very regularly) into our detectors, giving a kick to ToF, ID ~~and~~ Anode curr. etc. At PETRA they say that ~~same~~ the same ~~not~~ happens at CELLO.
12^{59} Beams lost again.

16^{00} Fest + Feuerstein on shift
PETRA screen says: break, transmitter error, restart 4^{00} pm 17^{00} Gas check done.
18^{00} PETRA people observe 'inflation' of the beam and work to cure it
20^{00} no beam in the machine since 2h magnet 2000 A
21^{25} beams at 21.8 GeV, background optimization, whereby they lost the beam 21^{40}
02^{30} filling ready.
23^{20} START to take data. Beam pipe chambers keeps tripping off. beams unstable

23^{45} missing Lam branch 7 crate 1 continuously - 1 DLP permanently on conversion
activated Error-signal for ID-Expert Swolin, no reply, finally phoned Dettke,
he is trying to use it via telephone with the help of the first arriving P. Warming
DLB #98 exchanged

13/7/85

0^{00} Warming & Hagenauer on shift
0^{45} During runs 21705/706 problems with tagging system. Fault seems to be a power supply of the tagging crate
Now cured!?
Beams dumped because e^+ current is very low, shortly afterwards ~~an~~ "klystron failure" on screen
4^{00} new fill ready, improving background
4^{20} beams lost again, "short break" there after
5^{55} Phone call from PLUTO (Herr Kaiser): PETRA in trouble! One klystron (a new one) has very bad vacuum and is almost at the point where it would be severely damaged (if not already). For stable operation of PETRA this klystron however is vital, but at present it is not able to deliver the power (at 2180 GeV) required. ~~And~~ PLUTO is not ~~going~~ willing to go any further in risking the destruction of it. Instead PLUTO tries to ~~thus they are trying~~ improve its vacuum by pumping patiently (this will last at least until monday morning).
For us there are only two alternatives: a) wait for repair on monday and go home
b) run at a lower energy (eg. 21.0 GeV with 2×25 mA)
(a) looks like wasting time, (b) is not very promissing either, because PLUTO will need about 1/2 day to tune the machine for the new energy and on Monday morning there will be access for Mark J anyhow.
Cello, Mark J and we think that a few hours of running (at lower energies) under probably bad conditions would not be worthwhile the effort. If, however, PETRA could do something useful that would result in an improved operation after the klystron problem been sorted out then PETRA should do it. Regarding this last point Herr Zeneke PETRA to be consulted (after 8^{00})

8^{00} Cartwright & Hagenauer
8^{10} Gas check done.
Peter phoned Wulf Bartel to tell him the situation; he agrees that half a day's running at different E_{beam} is not worthwhile, but wants PETRA to do something active

about fixing their klystron. We try to call Jochen Bürger (PETRA co-ordinator) — no reply.

9.15 Call from Jochen Bürger: If there will be a break of 6 to 8 hours announced by PKR, we should inform Mark J. In this case they are able to fix the problem with some phototubes (there reason for asking for access).

Magnet to 500A

9.40 Call from Wulfin Bartel: Magnet switched off, informed about Petra situation

9.55 Call from Beate Naroska: PKR tries to get klystron running, if:
a) they are successful ⇒ access for Mark J on monday
b) other case ⇒ access for Mark J during repair of klystron

11.30 I called PKR. They think that at 4 pm they know if it is possible to run at 21.8 GeV.
I informed Cello and Jasso. No reply from Mark J. Try later.

11.31 Call from Ekkhard Elsen: He will be unreachable until 2 pm.
(on call for 10)

11.43 Reached Mark J. They want to wait.

12.35 PETRA stops INJECTION !!! Magnet → 7500A
13.00 Current in PETRA (at last)
14.00 Beams lost again, after ½ hour at 16.4 GeV.
14.49 SWITCH ON HIGH VOLTAGE — but TOF rate > 10V!
14.55 TOF rate still > 10V; PETRA says BACKGROUND OPTIMISATION. Let's hope so!
15.00 They lost the beam — good riddance — TOF rate never even got on-scale!

16.00 E. Elsen ≥ R. Hedgecock
16.20 Gas check done; Ethane Kreislauf at 9.4. Adjusted now. RH. suggests that the catalyzer (PALLADIUM) be checked tomorrow. Day shift check with (Autobus) (Hospitals) MAHLAKE FM1) ↑ has been done last week W.Ba
H_2O, H_2O content high. Related to high outside temperature.
19.20 Beams. NORD Hang up (after HT-Trip in all chambers?)
IDAS READOUT ERROR 52 - CONTROL WORD 000 200 AFTER PAUSE / CONST. PEDESTAL: BP CHAM. HV FAIL
23.00 DURING. RUN 21711 — Still problems with Trigger 3 input / output. Mean digitizers

71–82 and 118–129 missing. Eventually traced to a oscillating power supply on HV rack beside crates 7 & 11. Reset as per MU FILTER INFORMATION FILE. But no check when it comes to next data running.

21.00 Called PKR. During the one hour of beam the vacuum in the klystron (cost-links) got worse again and that klystron tripped in the end. They are now trying to improve the vacuum again but they will not be able to deliver more than 4×1.4 mA. (They might have to change the klystron tomorrow). Twice the low current beams are expected soon we have the magnet on.

0.00 Bowdery and Kuhlen on shift

06.40 2 hours since beams were lost. New fill nearly ready.
T3 problem still appears to be there.

8:00 Kawagoe and Kleinwort on shift
9:30 Beams lost, all chambers tripped Gas check done
8.50 One of the LG ADC pedestals was newly wrong (CR2, ch 354). Corresponding ADC chip was replaced. and now OK.
T3 trigger fristes still wrong, I suspect some of the electronics is broken. Since T3 trigger is not used at present, there is no need to worry about it. It will be repaired some time in the near future. PLSt
14:50 beams partially lost, all chambers tripped → high ion
16:00 Komamiya and Glasser on shift
Gas check done
16.30 PKR wants to replace a KLYSTRON (next 4 hrs)
MARK-J wants access (6 hrs) Tasso also wants access. No arguments against it.
MAGNET AT 500
21.10 message RESTART AT 23:00
23.00 magnet up at 4845 Amps
23.30 Petra has transmitter problems (30 min?)

16.7. 0.00 Dietrich & Mills

Gas check
No beam.....
0.37 Short break (magnet → 500 ~~2500~~)
PKR say they don't know how long things will take. New Nord-50 program installed (run 21719 →)
4.00 HF-Problems for the next 10 minutes (???) Nord disc backed up.

Run	Date	Start	Stop	At run start I+	At run start I−	Dead time %	Time (sec)	Records in	Records out	All *10⁶	TØ res *10⁶	T1 Acc Sum	T2 Acc Sum	T1 Bit 2 E_L6 > 6 GeV	T2 Bit 17 Σ E_4 > 2 TeV
21716	15.7.85	6.48	7.42	4.16	4.25	13.7	3263	8002	3857	848	167	3898	6310	1187	38
21717	"	7.43	8.27	3.52	3.64	15.0	2607	5995	2682	678	102	3043	4709	787	19
21718	"	14:38	14:50	5.02	5.82	17.1	577	1699	895	150	26	764	1236	270	6
21719	16.7.85	6:12	6:42	3.71	3.84	17.1	1536	3973	1826	399	68	2008	2946	722	11
21720	"	22:04	22:42	4.72	4.71	18.0	859	2333	1102	223	40	1220	1603	404	11
21721	17/7/85	02^{10}	02^{57}	3.90	3.99	17.5	2283	5797	2889	594	104	3087	4012	1095	26
21722	-"-	05^{01}	05^{46}	5.46	5.31	21.2	2480	6521	3325	645	136	3187	4612	993	18
21723	"	16.48	17.17	5.71	5.55	24.3	2908	8062	4141	757	184	3945	5541	1357	32
21724	"	17^{33}	18^{28}	4.98	4.78	18.6	3018	8002	4105	785	146	4126	5689	1323	22
21725	"	18^{28}	18^{37}	4.33	4.09	22.5	~~1480~~	~~1185~~	595	125	28	608	813	179	34
21726	"	18^{40}	19^{00}	4.21	~~8.36~~	11.2	1097	2594	1179	285	32	1440	1957	382	3
21727	18.7.85	0.48	1.40	5.91	3.96	17.4	3062	7949	3848	797	138	4256	5499	1448	22
21728	"	17:21	17:36	5.11	4.76	16.4	886	2439	1180	230	38	1240	1741	418	10
21729	"	18:58	19:00	5.46	5.48	20.8	93	~~129~~	293 !	24	5	65	209	45	0
21732	"	20:43	21:31	5.27	5.49	13.6	2823	8002	3932	734	100	4394	5795	1590	30
21733	"	21.35	22.26	4.60	4.54	10.6	3048	8002	3699	793	83	4524	6097	~~1577~~	26
21734	"	22:28	23:24	4.03	3.84	13.0	3316	8001	3556	863	112	4372	5806	1279	23
21735	"	23:24	23:49	3.54	3.30	13.2	1408	3142	1353	366	48	1736	2297	510	9
21736	"	23.51	23:52	3.35	3.10			47	25			21			
21737	19.7.85	4^{03}	4^{50}	6.86	5.89	27.1	2795	8002	4200	726	136	3792	5608	1274	37
21738	"	4^{57}	5^{37}	5.52	5.09	21.2	1181	3411	1733	307	65	1664	2378	542	14
21739	"	11^{38}	11^{53}	5.88	5.88	17.6	955	2910	1429	249	44	1387	2082	497	8
21740	"	11^{54}	12^{42}	5.62	5.51	17.8	2849	8002	3846	741	132	3874	5819	1211	27
21741	"	12^{42}	13^{34}	5.00	4.75	15.8	3046	8001	3989	793	125	4048	6029	1255	27
21742	"	13^{35}	14^{01}	4.41	4.17	15.5	1358	3514	1713	353	55	1758	2823	547	9
21743	"	17^{50}	18^{25}	6.11	6.29	23.3	~~2636~~	~~2996~~	4116	699	168	3873	5594	1367	25
21744	"	18^{35}	19^{23}	5.37	5.54	17.6	2851	8002	4023	742	131	4118	5741	1359	25
21745	"	19^{24}	20^{19}	4.72	4.89	17.6	3204	8002	4036	838	140	4274	5832	1378	25
21746	"	20^{19}	21^{16}	4.14	4.29	14.0	3340	8002	3620	869	121	4434	5921	1341	25
21747	"	21^{16}	22^{10}	3.65	3.71	11.9	3196	7010	3073	832	99	4072	5113	1165	20
21748	"	22^{50}	23^{32}	6.14	6.45	26.3	2457	7351	3797	640	169	3484	5139	1251	26
21749	20/7/85	00^{18}	00^{22}	6.19	6.44	29.3	212	716	389	55.3	16.2	336	471	116	3
21750	-"-	00^{23}	00^{37}	6.10	6.35	24.2	822	2626	1412	214	51.7	1270	1800	470	11
21751	"	00^{38}	01^{04}	5.84	6.08	21.4	1351	4136	2134	351	75	2044	2766	733	11

Processors on/off NSO	MIP	TOF	FAMP	<L> 10^{30} cm^{-2} s^{-1}	Run/Fill ∫Ldt nb^{-1}	∫Ldt = Exp. Energy	IBM tape output	At run start I.D. (mA)	At run start TOF (V)	On line rej Sum MIP Tr %	On line rej Nord 50 GeV Tr %	Σ Events	MH	E_Beam	Mag field −1* Gauss	Remarks.
4	4	4	4	1.82	4.59	8457.18	IBM	1.5	1.3	46	54	52	1	21.800	4832	
4	"	"	"	1.29	2.65	8459.83	"			47	58	30	0	"	4831	beams lost
ON	ON	ON	OFF	3.50	2.30	8462.13	"	1.45	1.2	40	50	26	1	"	4840	beams lost
"	"	"	ON	1.25	1.68	8463.81	"	1.0	0.7	47	56	19	0	"	4834	beams lost
"	"	"	"	2.25	2.47	8466.28	"	1.2	1.5	45	56	28	0	"	4594	beams lost / magn. probl
"	"	"	"	1.91	4.95	8471.23	"	0.9	0.7	46	53	56	2	21.802	4838	BEAMS LOST
"	"	"	"	3.33	6.98	8478.21	"	1.5	1.1	41	52	79	1	-"-	4836	BEAMS LOST
"	"	"	"	4.19	13.52	8481.73	"	1.4	1.0	41	51	153	3	"	4837	
"	"	"	"	3.65	9.63	8491.36	"	1.3	0.9	44	51	~~199~~	3	"	4838	
"	"	"	"	3.03	1.68	8493.04	"	1.1	0.7	42	53	19	0	"	4837	
"	"	"	"	3.05	3.62	8496.66	"	1.1	0.6	45	56	41	2	"	4838	VTXC off / Beams lost VTXC on
"	"	"	"	3.46	10.07	8506.73	"	1.2	0.8	44	54	114	1	"	4846	Beams lost because of power supply
"	"	"	OFF	3.67	2.74	8509.47	"	1.2	1.0	44	55	31	2	"	4851	VTXC ON Beams lost
"	"	"	OFF	3.69	(0.18)	8509.47	" ?			83	53	(2)	(1)	"	4839	BAD EVENT STRUCTURE VTXC off
"	"	OFF	OFF	4.29	10.51	8519.98	IBM	1.4	1.0	41	52	119	4	21.800	4844	Ill. Jetc data VTXC off
"	"	OFF	OFF	3.32	10.34	8530.32	"	1.2	0.7	46	55	117	4	21.802	4844	
"	"	ON	OFF	2.50	8.28	8538.60	"	1.0	0.66	47	58	85	2	21.800	4844	VTXC on
ON	ON	ON	ON	~~2.69~~ 2.69	2.47	8541.07	"	0.9	0.55	47	60	28	1	21.800	4843	VTXC on stopped by trigger hang up
"	"	"	"	0.00	0.18	8541.25	"					2	0	21.802	4843	on Beams lost.
"	"	"	"	~~4.51~~ 4.51	11.31	8552.56	"	1.55	1.25	40	50	128	1	"	4840	on
"	"	"	"	3.83	4.42	8556.98	"	1.35	1.10	41	52	50	3	"	"	on Beams Lost
ON	ON	ON	OFF	4.48	3.98	8560.96	"	1.5	1.3	40	54	45	2	21.800	4844	
"	"	"	ON	3.66	10.96	8571.92	"	1.5	1.1	41	54	124	4	21.802	4844	
"	"	"	"	3.49	10.42	8582.34	"	1.25	0.8	45	53	118	4	21.800	4844	
"	"	"	"	2.71	3.45	8585.79	"	1.1	1.0	46	54	39	0	21.800	4847	beams lost
"	"	"	"	5.55	13.43	8599.22	"	1.4	0.88	39	51	152	5	"	4837	
"	"	"	"	4.67	13.52	8612.74	"	1.4	0.88	~~243~~	~~252~~	153	2	"	"	
"	"	"	"	3.43	12.28	8625.02	"	1.2	0.75	45	54	139	1	"	4840	MHal was cosmic beam
"	"	"	"	2.67	8.22	8633.24	"	1.1	0.65	48	57	93	3	"	"	
"	"	"	"	2.10	6.63	8639.87	"	0.9	0.55	50	58	75	5	"	"	beams dumped.
"	"	"	"	4.37	10.07	8649.94	"	1.3	1.6	37	51	114	1	"	4843	beams lost
"	"	"	"	5.38	0.88	8650.82	"	1.65	1.55	36	50	10	0	-"-	4837	RUN STOPPED BY MATALE
"	"	"	"	5.33	5.12	8655.94	"	1.40	1.05	38	49	58	0	-"-	4840	NO TRIGGERS - STOP RUN
"	"	"	"	4.71	6.01	8661.95	"	1.3	1.0	40	51	68	2	-"-	4841	BEAMS LOST.

5⁰⁰ we have beams, but TOF(V) >10V
5⁰⁵ beam lost (~~[illegible]~~)

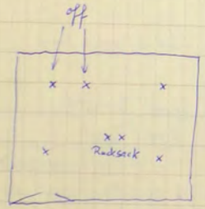
6⁰⁰ beam again TOF(V) = 10V
6³⁰ unstable beams - soft trip of Jet + BP chambers
6⁴⁰ " " " " " " " " - beams lost

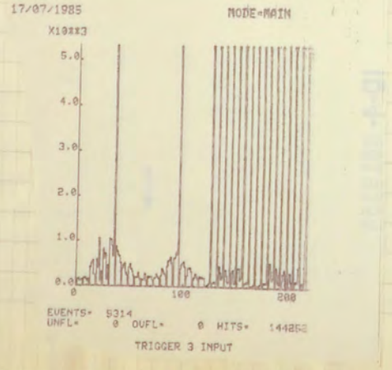
Looking at recent run summaries (and scaler events) it looks as if something is wrong with the T_i rates - 13 → 16 inclusive are zero - there are no cables plugged in (front scaler module) Has been like this for some time.

7²⁰ PETRA has "netzgerate" problems. Magnet ⇒ 2000A

8⁰⁰ M. Kuhlen and H. Rieseberg on shift.
8¹⁵ Gas check done
8²⁰ Indication TV switches from "Injection" to SHORT BREAK.
Phone to Herr Lenzke (PKR)
- Klystron was replaced last night, but it is not yet really tested (there was a run of ½ h this morning)
- Problem now is an oscillating power supply of a Quad. K-people are repairing the power supply. Estimated time ~ 1 hour

9⁵³ Petra Magnets 6.9 → 1.8 GeV → JADE Magnet 2000 → ~~500~~ A stuck at 2000 A. Reset/rundown to 0
9³⁵ Injection starts. JADE Magnet → 7500
10³⁵ Call from Mr. Lenzke: In Transmitter East an absorber has to be exchanged. Time needed is ~ 1½ hours
Magnet to 500 A
12³⁰ Missing T3 Problem.





I took advantage of the (rare) presence of Mr. A. Machetta in the JADE Hall and told him about the gap in the T_3 histograms: He found 2 out of 7 Muon Trigger Crates switched off. (This happened propably during the Shut Down!)
He switched them on.
Watch the TRIGGER 3 INPUT and OUTPUT histograms during the next run!
LOOKED AT DURING RUN 27720 - THEY LOOK NORMAL AGAIN ??
CRH

12⁵⁰ Injection starts again: Ramp magnet up.
14⁴⁰ PKR has problems with a Cavity and fluctuating current in a PETRA magnet. Once they succeeded in putting beams of 4 and 6 mA in the ring, but lost them very quickly
15¹⁰ Nord Hang-up: FAMP transfer error during Playback (P. Leutbecher)
15³⁰ Again Nord Hang-up after ERROR IN FAMP TRANSFER
15⁴⁰ Overtemperature 19.3°C Compressors 3 and 2 working continuously, 1 is off.
15⁵⁰ MK3 cannot be reached 19.5°C ↑ FADC crates off. Control technician and man from Stahlwerke are coming. Compressor 1 is not working. The oil differential pressure is wrong. Repair tomorrow!
16:00 Becker and Bowdery on shift.

Chances of getting beam seem small so we decide to split the shift.

17:45 FADC's on again.

18.00 Gas check

22.03 Start run, magnet current = 4100 Amps cannot be increased. Call to MK1.
22.10 HV wrong: TOF MF 53 Ch 14
22.12 MK1 people come → magnet curr. → 0 Amps, HV down
Probleme mit Stufentrafo - öffnen.
22.27 Magnet o.k.
22.35 Magnet: 7400 Amps, by hand → 7500
22.40 HV wrong: TOF MF 53 Ch 14 - ADJUSTED BY HAND TO STATED VALUE CRH.

17/7/85 27700
00.15 Gas check HEDGECOCK & LAURIKAINEN
SHORT BREAK - ONE HOUR OR MORE. MAGNET TO 1000A Power supply fault
01.45 Injection: Magnet to 7500A
02.10 HV WRONG, MUON CRATE MISSING FAULTY PART 9, 10
MFRAME 63 WAS OFF - MU CRATES + RESSET RESET IN H/WARE ROOM.
02³⁰ LOOK AT STANDARD HISTOGRAMS - THINGS LOOK OK.
02⁵⁷ BEAMS LOST - ALL CHAMBERS TRIP
05³⁰ We get a lot of ILLEGAL JETC DATA, MUON CRATE MISSING finally stop the run
05⁴⁵ Beams lost
06⁴⁵ INJECTION CHANGES TO KURZE UNTERBRECHUNG - ETWAS EINE STUNDE - MAGNET TO 6000A
07⁴⁵ PKR CANNOT TELL MORE THAN THAT THERE ARE PROBLEMS WITH THE POWER SUPPLY (SINCE YESTERDAY) - MIGHT TAKE 2 MORE HOURS

CLEANED CONTACTS ON DLB CRH
DLB BEFORE HISTOGRAM FILLED FOR EXPERT.

17/7/85 8°° R. Felst + H. Hills on shift

We inherit no beams, Temporary access and probable broken DL8. Gas check carried out. Magnet keeps sleep-walking so turn it off.

10^{12} Test run (1D) → no broken DL8 found.

12^{00} discussion with air conditioning people and Mr. Schmidt: one of the three compressors has an oil pump broken, has to be replaced by the factory - which got the order and will do it as soon as possible - air conditioning may ~~get~~ become marginal if ~~it~~ it gets warmer!

15^{20} Beams appear - raise magnet. PETRA information on TV not updated. Last tried beam used for xtors previously.

15^{33} After waiting several minuts at 18.661 GeV, the beams are lost

Magnet ⟹ 600A

16^{50} beams appearing. magnet ⟹ 1500A

1600 Komamiya + Kawagoe (KK$^{\oplus}_{\ominus}$) ($e^+e^- \to K^+K^-$)

16:43 Beams ready, Background very high ~ 8VCTOF)

16:47 Background looks ok. (~1V)

16:49 start run → VTX ch tripped → data taking without VTX
reset O.K. ←

1700 ↗ crate missing (#14) → reset OK.

Wire maps for jet-ch / Z-ch / VTX-ch look O.K. } → JADE looks working
LCh hit map looks reasonable

17^{20} Felst phone to us, saying

Tomorrow morning from 7^{00}, Mark J wants to have an access → about 6 hours breake

Do not tell it to Diedrmann and Olsson!

1735 Air conditioner (Temperature) Alarm
Temperature = 19.4°C
Fluctuating between 19.2°C – 19.5°C → phone MK3 5 possible phone number → no answer
As it looks not very serious, I decided to wait until (the temperature goes down or the temperature rises above 20°C
in order not to loose any data (with VTX-ch).

18^{00} gas check OK

18^{12} Temperature goes down. now about ~18°c OK.

18^{21} again temp. ALARM. ~19,3°C.

18^{36} 20,0 °C !!

⟹ Stop RUN and switch off flash ADC's
start R21726 without VTX ch.

19^{00} Z-chamber HV fail ⟶ reset O.K.

1901 all chambers tripped ⟵ Beams lost

In case of temperature alarm:
T > 20.0°C

1) Stop current run with VTXC

2) Switch off FADC-crates

3) Readout changes: a) SET-CAMAC:

br.#	1	2	3	4	5	6	7
	0	177B	37B	177B	177B	177B	177B

b) CH-R-P: 77737B
~~77735B~~

4) VTXC-HV off

NORD COMMANDS
FUNCTION-KEY

If temperature goes down:

1) Stop current run without VTXC

2) Switch on FADC-crates

3) Readout changes: a) SET-CAMAC:

br.#	1	2	3	4	5	6	7
	177B	177B	77B	177B	177B	177B	177B

b) CH-R-P: 77777B

4) Reload VTXC-processors: F15, F16

5) Switch VTXC-HV on

6) Start normal data taking

DO NOT CHANGE THE SEQUENCE OF THESE STEPS!

17/7/85

22^{00} Beams ready. Temp = 16.6 °C, so switched on Flash ADC and followed the procedure written in the page before.
But soon beams were lost, we got no luminosities!!

18/7/85

0000 Schreckloth and Boudery on shift
0020 gas checked
0030 Injection is well underway.
140 Beams lost because of a faulty power supply. Restart will be as soon as possible.
145 again trouble with power supply, reduced magnet current
600 no beams for 4 hours, PKR says there is no change to get beams till 7^{00}
Switched magnet off.

We leave the counting room.
8^{00} Olsson Gas checked 8^{30}

14^{30} Magnet cooling pumps switched off. (T > 60°). They have to be switched on before running up the magnet by MK1.

14^{45} Mag. Pumps on again. Valve readjusted. Magnet can be switched on.

14^{52} Petra is waiting for one or two Interlocks to be set. Apart from that, everything is ready.
15^{00} Taiwan Magnet will be on after 18^{00}, they repair the power supply.
15^{30} Prof. Ling from Taiwan, in company of Bürger from Mark I, has visited us, got a guided tour.

16^{00} Beate Naroska and H. Riesberg on shift.
Still "SHORT BREAK"
16^{20} Gas Rack done
16^{35} INJECTION. Magnet on and up to 7500 A
16^{40} Hurra! good beams in PETRA. B.N. was successful in the PKR!
17^{13} New filling ready. Start Run 21728 with VTXC
I^+ = 5.11 I^- = 4.76 mA
17^{36} Beams lost ~~because of magnet~~ because of "Strahlungsalarm".

18^{30} Readout of vertex ch. currents and HV installed, HEAD Bank with B-descr. Y. Word 18 in HEAD will hold a HV value for the vertex ch. currents will be added in a separate bank by N-50 later.
Modified routines: YPARA, YPAROT, YMAGNET, ZREAD, DUMPS-ZDAS, YRDVP J.O./C.K.

18^{55} New filling ready
Bad event structure : Faulty Port 1017
DL 8 temperature at 20,7°C! Temperature alarm in the mail.
19^{15} Beams lost
19^{20} Fadc-Crate, off
N50-Problem due to temperature. Removed cover plates of N50 ⇒ all OK again. Note! these errors were not due to the above program changes!
19.50 SHORT BREAK. DL8 off to cool down 20.4°C → 21.1 → 20.1
Petra has problems with the same old power supplies. They are near to despair.
Call Kuhn. Noltenius because of high temperature.
He seems to be close to despair also.
20.20 20.4° with FADC and DL8's off.
20.43 19.8°
20.40 New filling ready
Switch on DL8's
20.54 18.9° Switching on seems to be good. Alarm off.
Several DL8's have problems, probably because they were switched off.
At beginning of run # 21732 DL8 # 65, wires 520-527 : Non increasing wire number
DL8s # 113-116, wires 904-923 : not read out
DL8 # 182, wires 1456-63 : hanging
After some manips only DL8 # 65 is not started (only unpaired numbers)
21.25 DL8 temperature is now 19.0° (FADC's off)
22^{20} " " " " 17.0° "
22.50 FADC crates on, TOF MIPROC ON, PETRA STILL ON (MIRACLE?)
22.50 17.4°c Run 21734

In all crates of VTXC : OUTPUT STRING MISSMATCH
Call H. Kado : He advices how to stop the PC program. Data should be alright.
23.36 The PC runs an old program-version, → new version installed and tested → ok.
automatic VTX monitoring runs again. (HK)
23.49 Run # 21735 ends by trigger hang up
Pause/Continue doesn't help.

Changed TOF HV for counters 53/0
55/2+4

Error message will be printed. It is not possible to write changed values on the disk at the moment.

23.52 Beams lost. Pilotherm Alarm

19.7. 00^{01} Arthurs, Feist on shift
1^{00} gas check done
4^{04} New good fill!
4^{30} deadtime rather high ~30%, change "fill histograms" rate 100% to 20%
printer on the balcony prints pages or without interrupt fill off error message
switched it to off-line
5^{00} beam-pipe-chamber efficiency seems to be rather low through voltage at 1475 V
5^{05} V34: -12V missing → changed fuse

5^{40} beam lost
5^{43} short break, beam lost again due to pilotherm alarm, magnet gets really hot

8^{00} Kawagoe and Hagemann on shift
8:16 Gas check done
10:17 Call from B. Naroska: At noon HK3 will repair the compressor for the air condition.

11:30 Readout of VTX-Parameters reinstalled (XPARA, ZREAD, YMAGNET) C.K.

12 00 Updated disk for new HV-settings of TOF counters. There should not be any more error messages. B.N.

12^{25} YSPY; TOF TDC NO HITS 48
12^{55} " " " " " 60
13^{41} " " " " " 12
13^{46} ID soft trip
14^{00} beams lost, all chambers tripped
14^{40} Magnet to 2000 Amps. / Short break, Pilotherm Alarm

16^{00} H. Mills and G. Weber on shift

10^{00} The oil pump of one of the 3 compressors of the airconditioning system has been replaced and all 3 compressors are working again. Temperature at DLP's 15.1°C R. Feist

The JADE telephone's loud buzzer works rarely. Online Display for beampipe chamber updated.

21^{06} R-Z Chamber hard (HV) Trip. All else Ok. Restt Ok.

runs 21743 → 7 have last version of Nord-50 program which adds bunch25 to the scaler events.

22^{10} For first time since restart we have Beams dumped rather than lost!

Attempt to discover cause of high deadtime at start of fill. The trigger rate is a bit high for comfort (can anything be done?). The high deadtime comes in bursts. Tests of switching off the Z-vertex analysis (only performed on events with Tracks in ring 3) and the pattern recognition (on T2rec events with ≤350 hits R1+R2) did not show any obvious effects

We have had several of the "lost trigger interrupt" syndrome (check NOTRIGGERS & white trigger lamp is ON – PAUSE/CONTINUE works fine.

23^{30} Beams lost – 'pilotherm' error – all magnets tripped off

Reform job submitted

20/7/85
00^{01} BECKER & HEDGECOCK
GAS CHECK COMPLETED.
01^{10} SHORT BREAK APPEARS ON TV SCREEN.

3^{14} HV error LG 14/13
06^{35} Z-CHAMBER HV TRIPPED – RESET NORMALLY
SEVERAL IBM BUSY DURING Run 21755 BUS IBM TRANSFER ERROR(OCT) 000052 BUBERR(OCT) 00000 ERRCAT(OCT) 00000

8^{00} Jane McCorkindale and H. Rieseberg on shift.
8^{10} Gas check done
8^{16} Z-chamber HV trip. Reset ok.

Run	Date	Start	Stop	At run start I^+	At run start I^-	Dead time (%)	Time (sec)	Records in	Records out	ALL $*10^6$	Tϕ Raj $*10^6$	T1 Acc sum	T2 Acc sum	T1 Bit 2 $E_{cl}>6$ Gev	T2 Bit 12 2T. $E_{cl}>2$ T
21752	20/7/85	02[40]	3[24]	6.45	6.18	34.6	2191	6815	3462	570	187	2784	4764	920	18
21753	-"-	05[14]	06[01]	6.10	6.16	21.2	2806	8052	4147	730	155	4096	5611	1471	22
21754	-"-	06[01]	06[53]	5.38	5.35	15.9	2929	8001	4124	762	121	4195	5801	1394	29
21755	-"-	06[55]	07[42]	4.71	4.64	16.5	3356	8002	3867	873	144	4484	5860	1373	26
21756	-"-	07[52]	08[53]	4.14	4.06	12.6	3516	8002	3675	914	115	4618	5872	1263	27
21757	"	08[53]	09[14]	3.64	3.56	11.7	1230	2698	1196	320	37	1652	1911	518	5
21758	"	9[47]	10[36]	5.69	5.92	18.3	2808	8002	4090	731	134	4180	5680	1414	25
21759	"	10[37]	11[28]	5.04	5.19	15.8	3020	8002	3956	786	124	4264	5909	1426	28
21760	"	11[28]	12[23]	4.43	4.59	14.3	3163	8002	3946	823	118	4438	5868	1420	34
21761	"	12[24]	13[13]	3.92	4.01	12.9	2942	7073	3184	766	99	4112	5096	1283	19
21762	"	13[42]	14[29]	5.52	5.88	21.5	2798	8002	4146	728	156	~~5713~~ 4080	5713	1439	14
21763	"	14[30]	14[48]	4.90	5.23	16.0	3753	3049	1500	279	45	1682	2029	613	5
21764	"	14[53]	15[04]	4.62	4.94	19.5	600	1622	795	156	30	836	1124	279	7
21765-21766		junk				due to	Rrother	crate	controller						
21767	20/7/85	19[19]	20[21]	3.65	3.35	11.9	3508	7619	3149	912	109	4633	5416	1523	22
21768	"	22:32	22:47	4.56	4.34	16.7	891	2554	1183	232	39	1175	1559	370	10
21769	"	22:55	23:06	4.33	4.07	16.5	643	1481	700	167	28	781	1139	261	2
21770	20/7/85	23:35	00:23	4.08	3.86	13.7	3469	8002	3621	902	123	4582	5822	1585	26
21771	21/7/85	00:23	1:24	3.62	3.35	12.0	3576	8002	3419	930	112	4194	5854	1519	17
21772	21/7/85	1:24	1:51	3.88	3.92	12.1	1493	3233	1393	389	47	1787	2353	634	6
21773	21/7/85	2:55	3:22	5.27	5.48	18.2	2760	8001	3768	717	130	3758	5670	1253	38
21774	"	3:22	4:09	4.73	4.89	17.4	2807	8002	3611	730	126	3892	5602	1273	19
21775	"	4:10	5:02	4.27	4.39	15.1	3135	8002	3532	819	123	4225	5622	1418	16
21776	"	5:02	5:59	3.84	3.94	12.9	3334	8002	3401	867	111	4405	5779	1434	22
21777	"	5:59	6:06	3.45	3.53	11.9	356	878	464	92	11	491	659	1414	1
21778	"	7:22	8:11	5.86	5.96	17.2	2802	8002	3876	755	130	3935	5739	1256	24
21779	"	8:12	8:04	5.19	5.26	14.8	3082	8002	3788	804	119	4320	5650	1381	30
21780	"	8:05	8:96	4.64	4.69	14.9	1145	2860	1322	288	44	1549	1989	496	6
21781-21782		junk		due to p-chamber errors											
21783	21/7/85	10:34	11:23	3.81	3.85	11.8	2939	6738	4770	765	90	4087	4524	1309	16
21784	"	11:27	11:35	3.37	3.44	11.1	449	976	405	~~119~~ 116	13	590	654	203	3
21785	"	12:53	13:41	6.00	6.06	16.0	2865	8001	3841	745	119	4264	5376	1345	28
21786	"	13:42	14:32	5.28	5.18	14.1	3007	8002	3711	783	110	4364	5532	1426	20
21787	"	14:33	15:28	4.65	4.54	13.0	3304	8002	3603	860	112	4661	5523	1609	23

Processes ON/OFF NSO	MIP	TOF	FAMP	<L> $10^{28}cm^{-2}s^{-1}$	Bhabha $\int Ldt$ nb^{-1}	$\int L\,dt$ Exp. Energy	IBM Tape output	At run start ID (MA)	At run start TOF (V)	On line res. Sum Mprsc T2 %	On line res. Nord-50 T1&T2 %	Σ Bhabha	MH	E_{BEAM}	Mag field -1k Gauss	Remarks
ON	ON	ON	ON	4.38	8.31	8670.26	IBM	1.6	1.65	35	52	94	5	21800	4841	beams lost.
"	"	"	"	4.82	13.52	8683.78	"	1.5	1.25	41	50	163	2	-"-	4843	
"	"	"	"	4.23	11.84	8695.62	"	1.2	0.9	44	51	134	3	-"-	4844	
"	"	"	"	3.07	7.95	8703.57	"	1.05	0.78	48	54	90	3	-"-	4843	
"	"	"	"	2.38	6.27	8709.84	"	0.9	0.70	50	56	71	0	-"-	4843	
"	"	"	"	2.08	2.39	8712.23	"	0.8	0.55	53	58	27	1	21.802	4844	beams dumped
"	"	"	"	4.40	10.87	8723.10	"	1.3	1.15	43	51	123	2	21.800	4844	
"	"	"	"	3.27	7.42	8730.52	"	1.2	1.0	46	53	84	3	"	"	
"	"	"	"	2.57	7.69	8738.21	"	1.1	0.9	48	53	87	4	21.802	4844	
"	"	"	"	2.07	5.30	8743.51	"	0.9	0.8	49	57	60	0	21.802	4845	beams dumped
"	"	"	"	3.65	8.66	8752.17	"	1.4	1.3	41	51	98	3	21.800	4842	
"	"	"	"	3.51	3.89	8756.06	"	1.2	1.1	43	54	44	1	"	4844	
"	"	"	"	2.80	1.59	8757.65	"	1.0	0.9	42	54	18	0	21.802	"	beams lost.
"	"	"	"	1.37	3.45	8761.10	"	0.8	0.55	51	61	39	4	21.800	4840	beams dumped.
"	"	"	"	3.34	3.09	8764.19	"	1.1	0.70	21	57	35	0	"	4837	Bad DCP's
"	"	"	"	2.62	1.24	8765.43	"			48	56	14	1	"	4835	"
"	"	"	"	2.18	6.63	8772.06	"	0.9	0.7	49	57	75	4	21.802	4836	
"	"	"	"	1.70	4.77	8776.83	"	0.8	0.6	47	60	54	3	21.802	4834	
"	"	"	"	1.38	2.30	8779.13	"	0.6	0.55	52	60	26	3	21.802	4834	beams dumped
"	"	"	"	3.22	7.95	8787.08	"	1.2	2.0	38	56	80	1	21.8	4834	
"	"	"	"	2.75	7.07	8794.15	"	0.9	1.6	39	58	80	2	21.8	4834	
"	"	"	"	2.24	5.65	8799.80		1.4	0.8	42	58	64	4	21.8	4834	
"	"	"	"	1.31	3.05	8805.95	"	1.0	0.7	46	60	64	0	21.8	4833	
"	"	"	"	1.37	1.15	8806.60	"	0.9	0.6	43	57	13	0	21.8	4834	beams dumped
"	"	"	"	4.43	9.37	8815.97	"			41	53	106	1	21.802	4834	
"	"	"	"	3.15	8.30	8824.27	"	1.2	0.8	44	55	94	4	21.800	4834	
"	"	"	"	2.56	2.56	8826.83	"	1.0	0.6	44	57	29	0	"	4836	
"	"	"	"	2.29	6.89	8833.72	"	0.9	0.5	49	30	78	3	"	4838	NO MOON READOUT.
"	"	"	"	1.83	0.71	8834.43	"	0.8	0.4	43	61	8	0	"	4840	Moon Readout back in) NORD
"	"	"	"	4.78	11.66	8846.09	"	1.4	0.9	41	53	132	3	"	4837	50% problems.
"	"	"	"	3.81	11.13	8857.22	"	1.2	0.7	42	56	126	1	"	"	
"	"	"	"	2.92	9.98	8867.20	"	1.1	0.6	47	57	113	2	"	"	

YVOLTS Error since yesterday 20:18 (start of Run # 21746) we have
LG Distributors 12 and 13 Primary HV are low by 12 to 13 Volts.
-no action yet- K. Kawagoe is not at DESY

9⁰⁰ Found PC hang up since yesterday 22:50 Routine Error 240 PC = -11575, Run time Error ...
Reload PC with C. Kleinwort 'on line': It appears Gas alarm
Value failure reset. (was already wrong at 8h!)

9¹⁵ Beam dump.

9⁴⁵ New filling ready. Start Run # 21758, $\langle L \rangle = 5.2 \times 10^{30}$
Occasionally: ERROR 45 MP-16 analysis incomplete

10⁵² VTXC Value failure. Reset: Green lamp "Betrieb" doesn't go on. Error was not printed.

11³⁰ The LG HV problem in distributors 12+13 solved: (just after start of R 21760)
Beate Naroska comes and reads the input high voltage via the Program (NAR) TSTHV.
We turn the corresponding power supply # 7 from 1859 V (477.5 Volts) to 1870 V (483.0 Volts)

11⁵² z-Chamber HV-trip. Reset o.k.
Frequent - but short - peep from the Hard Ware Room not yet localized! Is it the PC?
• B.N. also repairs the loud buzzer of our telephone! Sorry, in fiddling too much, I destroyed it again
I will leave the problem to Herrn Mesbender R

13¹³ Stops for refill This fill was worse in luminosity than the preceding one, also in specific luminosity)
$31\ nb^{-1}$ in $3\frac{1}{2}$ hours $42\ nb^{-1}$ in 4 hours
~~pr non-decrementing hit number increases~~

13⁴⁰ New fill ready, start run # 21762
Call PKR because of the low luminosity (only 3.8×10^{30})

14¹⁰ A few missing LAM from DL8 # 62 in B4C3. Skaze DL8 → o.k.

14⁵⁸ JDAS READOUT ERROR 83 - Missing LAM branch 4 crate 3: ID Nyq 2 x3.
Stopped run. to clean contacts

15⁰⁹ Beams lost. Pilotherm alarm. SHORT BREAK
↳ Why in this case the beam must be dumped in the JADE detector?

16⁰⁵ PC reloaded
Same error like this morning. Time indicated 12 h. But was still running at 14 h

Note: ID-Pulser is not working. It seems that there is some interference with the VTXC-Control in the CAMAC serial Crate in the Rucksack (?)!

16³⁰ Warming + missing Zorn
gas check done, ok

17⁴⁵ finally new fill ready, lost at run start missing Lam br. 4 or 3
DL8 # 62 (just in that crate I had conversion lamp permanently on →
I cleaned contacts of # 62, no effect, called expert Andreas, we exchanged #62
~~no~~ same effect, missing lam ~~#~~ now in br 4 or 4, cleaned contacts of
lam grader and crate controller crate → no effect, we cleaned contacts of # 68 & 69
→ no effect, called expert J. Olsson, he advised us to print an event
with illegal jet chamber data ⊗, this revealed 3 different DL8's in cr 3
with non increasing wire number, we conclude the crate controller is broken
and exchange it, now everything is fine again, we resume data taking

19²⁰ Jan Olsson offers to step in for the still missing Zorn

9⁰⁰⁰ z-chamber hard trip, everything else is running!

20²⁰ beams dumped

22²⁵ new fill ready after long injection time
at run start 2 DL8's are missing or giving illegal data #150, 170
we clean contacts for both of them, faults cured thereafter.
IBM PC crashed meanwhile again, we leave it.

22⁴⁵ YSPY noticed 4 missing DL8's #145–149
they are in same crate as the trouble before
Jan runs a crate controller tests → indicates faults
thus we exchange the crate controller

⊗ F12 event display
F05 select event type
~~F04 HHH trigger etc~~
F06 F18 Special set mask 100 B
F02 clear + disselect all other selections
F03 regular event displ.
(not return)
if an event is drawn (this is one of the faulty events!):
(F17 abort display) if needed
F18 miscellaneous
F07 print raw banks
make hard copy and study the bank content

21.7.85 0000 Hughes & Glasser on shift
145 standard tests for just run 21771 show more ~~#~~ an extra missing wire compared to 21767
4:10 read errors listed in run summary for runs 21772, 21773, 21774

8⁰⁰ Barlow + Schmitt.
8¹¹ The ~~disabled~~-Plotter is not started automatically at the end of a run. The lamp "READY" is not on, now ok

also 33.

9[26]. JDAS errs 53 — Watchdog parms 000002 140204. [Missing LAMs from Branch 3 crate 2 and Branch 1 crate 1.
These errs come continuously. Pause/Continue did not help, neither does stopping the run. After various efforts
Switch off muon chamber readout by

SET-CAMAC 75B in crate 3

CHANGE-READOUT-PATTERN 77773B.

and call Jan Olsson.

11[30] ETHAN is running that P10 : 0.64 Warning called but no answer

11[30] Muon chamber readout again in, error did not repeat. However, after 800 words, general breakdown of JDAS, we rebuild the system.

12[00] Switched off Ethane supply on left of shed outside gas house. Opened 5 bottles on right hand side, vented them to the open air for a few seconds, then opened valve that connects them to the gas house. Gas house meter readings now look OK.

16[00] Hodgcock, Kleinvogt

16[20] GAS CHECK COMPLETED. - LOOKS NORMAL.

17[04] JDAS ERR 45 - MP-16 analysis incomplete; YY=1

19[20] Run 21793 no events due to missing IBM-Link

20[00] YSPY Trigger 2 output missing : 107

20[45] JDAS READOUT ERROR 33 MISSING LAM BR 3, CR 2 MUON CHAMBERS
53 SYSTEM CRATE WATCHDOG FIRE: PARMS = 000002 140204 (OCT)
33 MISSING LAM BR 1 CR 1 BEAMPIPE CHAMBER
} IN RAPID SEQUENCE.

21[55] " again

20[20] JDAS ERR 46 MP-16 out of sequence YY=0

22.07.85

0[00] Kawagoe + Cartwright

0[05] Gas check done, OK

2[54] Missing LAM branch 2 crate 4 : TOF2 counters

5[05] Missing LAM br 3 or 4 : Z-ch part 1
followed by many Missing LAM br 2 or 3: TOF1 counters. Pause/continue does not help.
Stop run, start new one — apparently OK.

5[38] Run hangs with NO TRIGGERS. OK after pause/continue

6[48] MP-16 out of sequence; YY=1

7[25] LR and VXC soft trip (TOF spike?)

7[00] ~ LG HV. DST 19 is something funny.
There were ~20 counters whose HV were wrongly set.
They cannot be reset by "RI-HB".
They could be reset only by "TSTHV".

" Don't Use "RI-HB" to reset LG-HV. at the moment, please." K.K. ?

8[00] Ambros, Feist on shift

8[15] Gas check O.K.

8[30] seemingly "illegal jet chamber data" flashing

16[00] H. Kado and H. Riesberg on shift

16[15] Gas check done, o.k.

16[20] Message from Collo (continuing) : No refill possible at the moment, problems with synchrotron magnet
<L> is down to 1.6×10^{30} . 18[00] Beams dumped

19:28 no beam before 23:00. Magnet current to 500 Amps

21[00] YMAGNET/YPARA changed so that Pulser Runs are again possible! J.O.

22:30 "Injection". Magnet back to 7500 Amps

23/7/85

0.00 Barlow & Krelbiel on shift
"short Break" Magnet down 750A
Restart time advances in regular steps 1.00 - 2.00 - 3.00

3.00. "Injection". Magnet up. 3.50 "short Break" No time. Magnet 1000A
"Wasserleck im Kühlsystem. Restart?"

4[00] Gas Check done. OK.

8.00 Jane McCorkindale & Jörg Hagemann on shift

8.20 Magnet switched off

8.30 Gas check done

15.50 "Injektion", switch magnet on, to 7500 Amps

16.00 Hughes & Schneekloth on shift

16'15 Gas check done

RUN	DATE	START	STOP	AT RUN START I^+	AT RUN START I^-	DEAD TIME (%)	TIME (sec)	RECORDS IN	RECORDS OUT	ALL $\times 10^6$	T∅ REJ $\times 10^6$	T_1 ACC SUM	T_2 ACC SUM	T_1 BIT2 $E_{tot} > 66$ GeV	T_2 BIT12 $2T \cdot E_{tot} > 2TR$
21788	27/7/85	15^{29}	16^{27}	4.09	3.98	12.3	3470	8002	3424	903	111	4830	5356	1320	18
21789	"	16^{27}	17^{28}	361	3.51	11.6	3641	8002	3229	947	110	5045	5236	1593	24
21790	"	1729	1749	3.18	3.18	10.6	1197	2460	1015	312	33	1993	1713	458	5
21791	----	18^{23}	—	5.55	4.60	13.3	—	945	447	—	—	—	—	—	—
21792	----	18^{33}	19^{20}	5.39	4.32	13.5	3230	8002	3696	841	113	4546	5486	1429	24
21794	----	19^{29}	20^{27}	4.64	3.59	12.9	3938	8001	3452	895	116	4826	5450	1453	19
21795	----	20^{27}	21^{08}	4.01	3.05	13.0	2402	5192	2100	624	81	3202	3463	986	11
21796	----	21^{42}	22^{41}	5.21	4.30	13.8	3797	8002	3788	832	115	4551	5502	1340	16
21797	"	22^{40}	23^{37}	4.51	4.53	12.6	3365	8002	3530	876	110	4752	5461	1447	19
21798	"	23^{38}	0^{37}	3.96	3.97	11.7	3572	8002	3582	929	109	4888	5424	1488	16
21799	28/7/85	0^{38}	1^{15}	3.50	3.50	11.2	2194	4720	1942	570	64	2909	3191	828	13
21800	"	2^{23}	3^{15}	5.76	5.78	14.7	3070	8002	3946	798	118	4803	5496	1171	23
21801	"	3^{15}	4^{10}	5.03	4.64	13.1	3269	8002	3672	850	111	4427	5525	1212	20
21802	"	4^{10}	5^{05}	4.43	3.92	11.9	3274	7503	3207	852	101	4436	5043	1185	18
21803	"	5^{07}	5^{51}	3.92	3.37	12.1	2577	5590	2358	670	81	3279	3769	849	11
21804	"	6^{38}	7^{30}	5.88	5.89	16.7	2945	8002	4105	766	128	4158	5513	1162	18
21805	"	7^{30}	8^{24}	5.11	4.89	14.1	3276	8002	3782	836	117	4413	5566	1217	18
21806	"	8^{25}	9^{22}	4.48	4.21	12.5	3354	8001	3549	874	109	4664	5463	1290	15
21808	"	11^{11}	12^{02}	5.78	5.89	16.3	3040	8002	4104	791	128	4074	5721	1077	30
21809	"	12^{02}	12^{30}	5.04	4.98	14.6	1607	4140	1987	418	61	2261	2844	607	12
21810	"	13^{19}	14^{12}	5.56	5.52	15.2	3151	8002	4024	820	124	4194	5681	1115	29
21811	"	14^{13}	15^{11}	4.89	4.41	13.3	3463	8002	3608	901	125	4553	5562	1229	21
21812	"	15^{12}	16^{12}	4.30	3.81	11.8	3630	8001	3456	945	112	4671	5776	1248	28
21813	"	16:13	17:15	3.79	3.29	11.7	3736	8002	3437	972	113	4877	5550	1333	19
21814	"	17:16	18:00	3.37	2.90	10.9	2596	5415	2273	675	73	3332	3765	999	10
21815	24.7.85	3:54	4:55	4.01	4.06	11.7	3653	8002	3482	950	111	4447	5830	1249	21
21816	"	4:55	6:01	3.57	3.62	11.6	3927	8001	3303	1021	118	4658	5757	1281	27
21817	"	6:01	6:59	3.18	3.22	10.7	3160	6026	2431	822	88	3645	4273	1015	16
21818	"	7:29	8:19	5.64	5.83	16.1	2912	8001	3974	757	122	3985	5706	1260	22
21819	"	8:17	9:12	5:04	5:04	14.3	3111	8001	3860	810	116	4269	5583	1342	22
21820	"	9:13	10:04	4.46	4.46	14.8	3087	8001	3791	804	119	4529	5346	1382	14
21821	"	10:05	11:01	3.99	3.90	12.7	3363	8002	3587	875	111	4661	5479	1490	17
21822	"	11:01	12:02	3.96	3.92	11.4	3617	8002	3478	941	108	4844	5437	1629	19
21823	"	12:03	12:09	3.15	2.96	11.1	322	735	326	84	9	431	477	132	1

PROCESSORS ON/OFF NSO	HIP	TOF	FAMP	<L> 10^{30} cm^{-2} s^{-1}	Bhabha $\int L dt$ nb^{-1}	$\int L dt$ EXP. ENERGY	IBM TAPE OUTPUT	AT RUN START I D (μA)	AT RUN START TOF (V)	ONLINE REJ SUM MIPROC T_2 %	ONLINE REJ WORD 30 $T_1 T_2$ %	Σ Bhabha	MH	E_{BEAM}	Mag. Field −1.6 Gauss	Remarks
ON	ON	ON	ON	2.16	663	8873.83	IBM	1.0	0.5	49	60	75	1	21800	4837	
"	"	"	"	1.79	5.48	8879.31	"	0.8	0.4	50	62	62	4	"	4838	
"	"	"	"	1.5	1.15	8880.46	"	07	0.35	50	61	13	0	21800	4840	BEAMS DUMPED.
"	"	"	OFF	3.65	~~1.38~~	8881.79	"	1.2	0.7	—	—	—	—	----	4840	NORY HANGS.
ON	ON	ON	ON	3.20	9.45	8891.24	"	1.15	0.67	45	56	107	2	21800	4841	
"	"	"	"	2.12	8.13	8899 37	"	1.0	0.5	49	59	92	0	21800	4840	
"	"	"	"	1.75	3.18	8902.55	"	0.8	0.4	49	62	36	2	21800	4838	beams dumped
"	"	"	"	3.75	9.98	8912.53	"	1.2	0.7	45	55	113	4	21800	4838	
"	"	"	"	2.89	8.84	8921.37	"	1.0	0.55	48	58	100	2	21802	4837	
"	"	"	"	~~8.19~~ 8.11	7.69	8929.06	"	0.9	0.45	49	60	88	2	21800	4835	
"	"	"	"	1.72	3.71	8932.77	"	0.7	0.38	50	61	42	1	21800	4836	Beams dumped
"	"	"	"	4.26	12.10	8944.87	"	1.35	0.9	41	58	137	2	"	4835	
"	"	"	"	3.16	9.10	8953.97	"	1.2	0.5	48	58	113	1	"	"	
"	"	"	"	2.55	8.04	8962.01	"	1.0	0.45	47	60	91	1	"	4834	
"	"	"	"	1.98	5.83	8967.84	"	0.8	0.4	46	61	66	1	"	"	Beams dumped
"	"	"	"	4.87	13.43	8981.27	"	1.4	0.8	41	51	152	4	"	"	
"	"	"	"	3.34	9.01	8990.28	"	1.2	0.6	50	55	102	3	"	4836	
"	"	"	"	2.57	6.71	8996.99	"	1.0	0.5	53	58	76	0	"	4835	beam tst dump 21807 no store
"	"	"	"	4.17	12.99	9009.98	"	1.35	0.85	41	51	147	6	"	4837	
"	"	"	"	3.20	4.86	9014.84	"	1.25	0.70	43	55	55	1	"	"	beam tst
"	"	"	"	3.65	8.75	9023.59	"	1.3	0.78	43	52	89	2	"	"	
"	"	"	"	2.74	8.57	9032.16	"	1.0	0.60	46	57	97	4	"	4836	
"	"	"	"	2.13	7.07	9039.23	"			49	55	80	2	21802	4835	
"	"	"	"	1.53	5.65	9044.88	"	0.8	0.45	50	59	64	0	"	4847	
"	"	"	"	1.33	3.18	9048.06	"	0.6	0.40	57	61	36	1	"	4846	beams dumped
ON	ON	ON	OFF	2.11	7.24	9055.30	"	0.8	0.7	47	59	82	2	21800	4844	
"	"	"	"	1.72	5.83	9061.13	"	0.6	0.5	49	61	66	2	21802	"	
"	"	"	"	1.23	3.36	9064.49	"	0.6	0.3	51	62	38	2	21800	4846	beams dumped
ON	ON	ON	OFF	4.17	11.22	9075.71	"			42	53	127	3	21800	+4846	
"	"	"	ON	3.17	8.30	9084.01	"	0.6	0.6	~~42~~ 44	~~53~~ 55	~~127~~ 124	~~3~~ 2	21800	+4847	
"	"	"	"	2.46	6.18	9090.19	"	1.0	0.6	45	55	70	1	21800	+4847	
"	"	"	"	2.07	5.30	9095.49	"	1.0	0.5	47	58	60	2	"	"	
"	"	"	"	1.79	6.45	9101.94	"	0.8	0.5	50	59	73	5	"	"	
"	"	"	"	1.47	0.80	9102.74	"	0.7	0.4	47	59	9	0	"	"	Beams Dumped.

24.7.85

0⁰⁰ Ambrus & Magnussen on shift

0¹⁰ Gas check ok.

3⁰⁰ Afk: call to PKR magnet current set to 7500 A (from 4000); this seems to have cured PETRA's problems to surpass 18 GeV

3⁵³ Data taking continues!

8⁰⁰ Barlow & Ramcke on shift

8⁰⁰ Gas check o.k.

8¹⁹ FAMP switched back on as there seemed no reason first to be off.

10²⁰ Vast number of Japanese visit SLADE experiment - experiment working!

11⁰⁰ Hallendienst come as the temperature in the hall was high and the air conditioning wasn't enough.
They have reset the thermostat from its winter setting to its summer one (17°)
This is in the grey box on the left hand side of the hall as you go in. We can reset it ourselves if we want to another time. There is no need to switch the fans on by hand.

11²⁰ VTXC-Setting (Q_2)

16⁰⁰ Kawagoe - Form

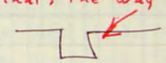
17¹⁷ Gas Check Done. OK.

20⁴⁰ JDAS ERR 33 Missing CAM branch 3 crate 2 ; Muon chamber
——— 53 System crate watchdog flag PARMS = 000002 140204 (oct)
——— 33 branch 3 crate 2
——— 53 System.
——— 33 branch 1 crate 1
——— 33 branch 2
pause/continue didn't help. STOP/RESTART didn't help.

P. Warning was not reachable.
We replaced a camac module. but didn't help.
Finally switch off/on the local muon crate downstairs ... but in vain.
→ At last we could reach P. Warning. → he will come.
Exchanging Crate Controller (SLOT hat OK!) seemed to have helped... I.O.;
~~Take data without muon chambers until Peter will come in.~~

21⁵² Finally we were back ~~in data running~~ in operation

it was found finally no error.

23³⁰ I found an error in the trigger system. It may affect on the LG and TOF counters. The polarity of the bunch crossing (~~6-3-4~~ 6-3-4) was wrong, because the other output of the beam crossing module (~~6-3-1~~ 6-3-1) was used.
(The output of 6-3-4 should be but it was  That's the way it should be! a standard NIM signal! Love
from Minowa's Note)

☆ For the LG counters, the effect is only (hopefully) ~~ADC~~ the timing of 2280 ADC Fast Clear, and is not so important. But how about for TOF ??

To Beate Noroska // from K. Kawagoe.

☆ When I changed the polarity, ~~the~~ other problems appeared. Latch strobe signals didn't appear, and the timing of the FAST clear became much worse. (the negative pulse is the correct one ??)
So. I did not change anything. I will discuss tomorrow with ~~Mr.~~ Mr. Krebiel.

Other readers: ignore everything above!

25.7.85

0⁰⁰ Hughes, Kleinwort

0³⁰ Gas-check done

0⁴⁵ JDAS ERR 33 BR 3 CR 4 : Z-CH
" " " 2 3 : TOF1 emitted beams / continue

1¹⁵ VTXC hard, ID, off trip ← part of beams lost
~~shot~~ beak

5⁰⁵ new fill ready
VTXC hard, ID, Z-CH off trip, 0.3 mA e⁻ lost

5¹³ " again
Peter has problems with a quadrupol-powersupply, strange beam in ram 21839, until event = 1700 $\mathcal{L}$=0, $\int \mathcal{L}dt$=0

7¹⁰ JDAS ERR 33: missing cam BR 2 CR 4 : TOF2

afterwards " = 3000 $\mathcal{L} = 2.5 \cdot 10^{30}$
" = 4000 $\mathcal{L} = 3.5 \cdot 10^{30}$

8⁰⁰ Dieckmann + Konczinjn
8²⁰ Gas check done
8³⁷ Missing LAM Br=2 Cr=4 : TOF2 counters
8⁵⁴ Beams lost
magnet → 500A ⇒ 0A

RUN	DATE	START	STOP	AT RUN START I+	AT RUN START I−	DEAD TIME (%)	TIME (sec)	RECORDS IN	RECORDS OUT	ALL *10⁶	TΦ REJ *10⁶	T1 ACC SUM	T2 ACC SUM	T1 BIT 2 E26>66eV	T2 BIT 17 2T-E4 ≥ 2TR
21824	24.07.85	13:07	13:55	5.58	5.86	18	2832	8001	8831	737	134	3962	5445	1266	22
21825	〃	13:57	14:48	4.89	4.79	14.9	3047	8002	3667	793	118	4271	5677	1447	26
21826	〃	14:48	15:45	4.32	4.08	13.5	3371	8002	3497	877	118	4523	5872	1485	24
21827	〃	15:45	16:45	3.81	3.49	12.1	3154	7109	3078	821	99	4228	4969	1367	22
21828	〃	18:18	19:05	5.87	5.82	20.8	2827	8002	4009	736	153	3896	5663	1240	29
21829	〃	19:06	19:54	5.21	5.01	18.8	2893	8002	3989	753	141	4183	5560	1419	29
21830	〃	20:13	20:39	4.42	4.18	13.5	1425	3704	1596	371	50	2080	2470	685	11
21831									JUNK						
21832	〃	20:52	20:55	4.04	3.79	13.0	76	211	104	20	3	119	134	37	1
21833	〃	21:31	21:35	3.70	3.46			195	84						
21834	〃	21:41	21:46	3.64	3.40			415	281						
21835	〃	21:52	22:53	3.56	3.33	11.9	3633	8002	3288	945	112	4906	5388	1624	14
21836	〃	22:53	22:55	3.15	2.94			221	92						
21837	25.7.85	0:00	0:50	5.29	4.70	15.0	3029	8002	3739	788	125	4334	5338	1443	30
21838	〃	0:50	1:13	4.70	4.13	12.9	1332	3291	1459	347	47	1877	2253	624	1
21839	〃	5:11	6:07	6.02	4.10	15.0	3196	8002	3698	832	125	4789	5775	1363	23
21840	〃	6:07	7:03	5.40	3.53	13.8	3291	8002	3438	856	117	4499	5432	1471	27
21841	〃	7:03	8:02	4.81	3.05	12.1	3472	8001	3431	904	104	4579	5577	1491	33
21843	〃	8:04	8:53	4.20	2.64	11.4	2907	6291	2642	756	85	3764	4267	1117	14
21844	〃	13:26	14:27	4.36	3.26	12.2	3647	8002	3352	950	116	4553	5670	1407	21
21845	〃	14:27	15:31	3.75	2.78	11.1	3781	8002	3248	984	109	4812	5586	1501	20
21846	〃	15:31	16:38	3.23	2.36	10.6	3795	7669	2955	988	105	4815	5346	1539	12
21847	〃	16:39	16:45	2.76	2.00	9.7	392	611	241	76	7.4	383	361	119	1
21848	〃	18:20	19:13	5.21	4.80	14.8	3080	8001	3806	801	118	4406	5377	1443	27
21849	〃	19:13	19:21	4.48	4.08	12.7	455	1147	521	119	15	637	781	224	1
21850	〃	20:41	21:39	5.35	5.41	15.3	2910	8002	3852	757	116	4279	5502	1408	25
21851	〃	21:39	21:46	4.61	4.64	14.2	414	1193	530	108	15	692	750	209	5
21852	〃	21:46	22:46	4.49	4.52	13.4	3263	8002	3475	849	113	4553	5502	1478	13
21853	〃	22:46	23:45	3.69	3.59	11.9	3506	8002	3295	912	109	4834	5429	1599	26
21854	〃	23:45	0:10	3.16	3.08	11.1	1472	3185	1323	383	42	1887	2118	726	9
21855	26.7.85	0:40	1:31	5.41	5.57	15.2	2982	8002	3731	776	118	4410	5422	1527	21
21856	〃	1:31	1:55	4.61	4.73	13.8	1401	3631	1686	365	50	2086	2436	659	10
21857	〃	3:17	4:07	5.86	6.02	15.8	2773	8002	3893	734	122	4191	5433	1260	14
21858	〃	4:07	5:02	4.95	5.11	13.4	3154	8002	3120	822	110	4520	5482	1464	21
21859	} junk														
21860															

PROCESSORS ON/OFF VSO	MIP	TOF	FAMP	⟨L⟩ 10^{30} cm^{-2} s^{-1}	Bhabha ∫L dt nb^{-1}	∫L dt EXP. ENERGY	IBM/TAPE OUTPUT	AT RUN START ID (μA)	AT RUN START TOF (V)	ONLINE REJ. SUM MICPROC T_2 %	ONLINE REJ. NORD-50 $T_1 \wedge T_2$ %	Σ_{Bhabha}	MH	E_{BEAM}	MAG FIELD −1 ⇔ CW/SS	REMARKS
ON	ON	ON	ON	4.03	8.75	9111.49	IBM	1.4	0.9	39	55	99	2	21.802	−4.850	
〃	〃	〃	〃	3.02	8.22	9119.71	〃	1.2	0.9	44	57	93	0	〃	4.833	
〃	〃	〃	〃	2.33	6.45	9126.16	〃	1.0	0.7	47	59	73	0	〃	〃	
〃	〃	〃	〃	1.80	5.69	9131.85	〃	0.8	0.55	48	59	67	1	〃	−4.854	Beams dumped
〃	〃	〃	〃	3.97	9.19	9141.04	〃	1.4	1.3	41	53	104	0	21.800	4840	
〃	〃	〃	〃	3.17	9.37	9150.41	〃	1.3	1.05	44	53	106	0	21.802	4841	
〃	〃	〃	〃	2.67	4.15	9154.56	〃	1.0	0.8	44	60	47	0	21.800	4840	Nord error
〃	〃	〃	〃	2.14	0.18	9154.74	IBM	—	—	47	56	2	0	21.802	4839	junk ~~(almost junk (Nord error))~~
〃	〃	〃	〃	1.15	0.18	9154.92	〃					2	0	21.802	4840	short run due to the muon crate trouble
〃	〃	〃	〃	1.10	0.35	9155.27	〃					4	0	21.802	4840	
〃	〃	〃	〃	1.50	5.57	9161.84	〃	0.8	0.4	50	61	63	1	21.800	4.837	
〃	〃	〃	〃	1.48	0.09	9161.93	〃					1	0	21.80	4.837	
〃	〃	〃	〃	3.24	8.92	9170.85	〃	1.2	0.75	42	56	101	1	21.800	4837	
〃	〃	〃	〃	3.09	2.74	9173.59	〃	1.1	0.6	47	58	31	2	〃	〃	part of beam lost, rest dumped
〃	〃	〃	〃	2.49	6.18	9179.77	〃	1.2	0.85	45	57	70	4	〃	〃	
〃	〃	〃	〃	2.73	8.13	9187.90	〃	1.1	0.65	46	60	90	3	〃	〃	
〃	〃	〃	〃	2.02	5.48	9193.38	〃	1.0	0.5	47	60	62	2	〃	〃	
〃	〃	〃	〃	1.62	3.48	9197.36	〃	—	—	49	60	45	1	〃	〃	beams lost
〃	〃	〃	〃	1.99	6.27	9203.63	〃	1.0	1.7	48	61	71	2	〃	4836	
〃	〃	〃	〃	1.31	5.12	9208.75	〃	0.8	1.0	50	62	58	1	〃	4838	
〃	〃	〃	〃	1.08	3.89	9212.64	〃	0.6	0.3	53	64	44	2	〃	4840	
〃	〃	〃	〃	0.97	0.35	9212.99	〃	0.5	0.3	46	64	4	0	〃	4840	BEAMS DUMPED
〃	〃	〃	〃	3.21	10.16	9223.15	〃	1.2	0.8	44	55	115	1	21.800	4843	
〃	?	?	?	2.87	1.31	9224.46	〃	1.0	0.6	45	57	21	0	〃	4842	beams lost
〃	〃	〃	OFF	3.88	~~9.29~~ 9.18	9233.56	〃	1.3	0.9	43	54	103	4	21.800	4841	
〃	〃	〃	~~OFF~~ ON	3.28	1.24	9234.80	〃	1.1	0.7	43	59	14	0	〃	〃	STOPPED TO SWITCH ON FAMP
ON	ON	ON	ON	2.56	7.42	9242,22	〃	1.1	0.65	46	59	84	4	〃	4840	
〃	〃	〃	〃	1.71	7.60	9249.82	〃	0.8	0.45	49	61	86	2	〃	4839	
〃	〃	〃	〃	1.54	2.21	9252.03	〃	0.7	0.35	51	61	25	0	〃	4841	beams dumped
〃	〃	〃	〃	3.89	9.81	9261.84	〃	1.3	0.8	43	56	111	1	21.802	4838	
〃	〃	〃	〃	3.04	3.53	9265.37	〃	0.9	0.6	46	56	40	1	21.800	4839	beams lost
〃	〃	〃	〃	4.57	9.90	9275.27	〃	1.4	0.8	40	54	112	2	21.802	4837	
〃	〃	〃	〃	3.35	9.45	9284.72	〃	1.2	0.6	45	57	107	0	21.800	4838	

13^{00} Magnet 0 → 7500 A
13^{25} Beams ready, Low currents : $I^+ = 3.25$ mA $I^- = 4.35$ mA
13^{34} "Trouble with beam transport system" on TV

16^{00} HEGGECOCK & DIETRICH
16^{15} GAS CHECK COMPLETE.
JDAS READOUT ERROR 73 - CAMAC ACCESS FAIL BR 1 CR 7 B/PIPE CHAMBER

0^{00} Barlow & Schmidt.
0^{10} Gas check done ok
1.^{55} Beams lost hard trip ID, VTXC
8^{00} Lauxtermann & Kvebbid on shift

8^{09} Z-Chamber HV trip
8^{30} " "
9^{00} Beams lost. Chambers jackpot hit. (All tripped)
11^{75} JDAS Err 57, False OLB interrupt br. 4 cr. 5
12^{40} LG HV Distributors 12,13 1.86 should be 1.87
13^{19} Z-ch trip, alarm cannot be reset, start R 21869 without z ch. in readout, try phone expert. due to wrong order in resetting! (Should be start - Reset...) Sorry ... J.O.

→ LG HV BARREL 7, which had sometimes drifted ±10V, was ~~has~~ ~~been~~ replaced by a spare HV. 13:30 K. Kawagoe with help of J.O. & H.K.

15^{00} Petra wants to inject again, but Mark J broke their interlock, do not respond to telephone call
" Magnet trouble. Impossible to run up or down. MKK people say : Possibly too hot in the regulator house. Air filters congested. However: After cleaning filters Magnet is controllable by hand, not by computer.
The magnet value is read correctly via the computer - Magnet control must be done by hand.
Problem probably has to wait for E-Eleven

16^{00} McCormack + Bethke on shift
16^{05} injection, magnet up (by hand),
17^{35} Nord 50 busy, no ents. Memory out of range.
18^{45} Stop run, Reload Nord, start run 12871. (Forgot to switch on FAMS before).
Energy-change → 27.820, end of run 2787~~3~~. During stand of 27876, energy back to 27.800.
18^{55} Vx ch - gas error. Call Rauche, he sent me to the Gashouse, pressing the one button of TG5 that was not on. Error vanished.

↑ probably transmitter failure, HF frequency changed, orbit bigger, magnet current underpaid

20^{34} Start run 21875.
20^{50} Vertex chamber trip. Down HV.
20^{55} start run 21876, Petra information link down, have to write in by hand e^+, e^-, E_b
(Lost existing data to IBM works)
23^{30} Dump beams.

0^{00} Diedrann, Dietrich
0^{30} Gas check done
5^{30} Nord hangs up, no restart possible, phone (Jan Olsson ↗ he told us to phone Howard! , [IOx-Error, Level 12 ···, Address = 7010]
6^{00} put Backup B on red diskdrive (as Howard told us) didn't help, same as before!
Jan is coming now.

8^{00} Allison, Zelst.
Still working on NORD
8^{10} gas check O.K.
8^{25} A terminal card in N10 was found broken; A replacement card also broken. The N10 connection of the IBM PC in CAMAC room is now dead, to be replaced later. J.O.
9^{---} Several tasks were found broken, symptoms: N50 stopping at various stages. Rebuilt ZMONX, ZDAS
9^{39} JDAS ERROR 33 - Missing LAM branch 2 crate 3 : TOF 1 counters — YIAFT, YEDISP ⇒ OK?
9^{54} N50 hang up. Jan Olsen still here.
10^{04} Data taking again
10^{10} HT Off at PKR request (beam sudden drop to 2 mA)
11^{25} System newly built, N50-hubs, Memory tests done, all seems OK...
Errors occurred again, also with backup program, (DAS) OLD-N50DAR
13^{06} Chaos — every buggy going. Wire chambers trip. ID anode current off-scale (even after volts down) PKR say DESY magnets were switched off 2 minutes ago — could have caused a small beam loss.
13^{12} Resume run. Magnet current dropping. Will not go higher.
14^{35} PKR ask for HT Off. ~~Need fill~~. Injection
15^{08} New fill. Run started 15".
15^{16} JDAS error 46 - MP-16 out of sequence ; XY=1.

NORD PROBLEM
We had 2 or 3 N50 crashes.
If it happens again, follow the instructions on the scrappy pieces of paper clipped to this page.

16^{00} Barlow + Klinke on shift.
16^{10} gas check done : ok!

RUN	DATE	START	STOP	AT RUN START I+	AT RUN START I−	DEAD TIME (%)	TIME (sec)	RECORDS IN	RECORDS OUT	ALL ×10⁶	TØ DET ×10⁶	T1 ACC SUM	T2 ACC SUM	T1 BIT 2 E_LG > 66.N	T2 BIT 17 2T.E_LL ≥ 2TR
21861	26.7.85	5^17	5^57	3.99	4.14	12.2	2361	5506	2413	615	748	3277	3689	982	14
21862	"	6^44	7^36	5.10	5.95	14.2	3101	8002	7557	807	115	4239	5723	1219	19
21863	26/07/85	7.36	8.37	4.31	5.08	13.8	3258	8002	3587	847	117	4594	5400	1419	23
21864	"	8.36	9.07	3.59	4.28	12.8	1374	3165	1360	358	46	1903	2061	543	9
21865	"	10.26	11.17	5.74	5.62	14.4	2976	8002	3900	774	112	4363	5318	1338	23
21866	"	11.16	12.12	4.88	4.78	13.1	3766	8002	3649	824	108	4582	5462	1394	17
21867	"	12.12	13.11	4.12	4.00	12.4	3469	8002	3516	903	112	4654	5481	1388	28
21868	"	13:12	13:13	3.99	3.35	12.0	106	298	141	27	3	175	155	50	3
21869	"	13:17	13:27	3.44	3.27	10.8	545	1171	491	142	15	727	796	213	3
21870	"	17.31	17.41	5.72	4.03	14.2	138	341	201	36	5	206	242	41	~~1~~ 1
21871	"	17.43	18.08	5.61	3.94	14.8	1389	3672	3677	361	53	1879	2680	549	9
21872	"	18:00	18:10	5.23	3.53	17.5	589	1513	749	153	27	808	1000	235	3
21873	"	18.32	18.51	5.05	3.86	12.4	1683	3995	1759	438	54	2188	2661	659	9
21874	"	18.52	19.57	4.13	3.49	11.8	3667	7697	3084	955	107	4582	5403	1404	26
21875	"	20.36	20:50	~~5.57~~	~~5.43~~	16.5	808	2295	1144	270	4035	1176	1562	344	0
21876	"	20.58	21.49	5.18	4.98	16.4	3012 3312	8001	3858	783	129	4437	5295	1389	23
21877	"	21^49	22^45	4.42	4.07	13.8	~~8002~~	8002	3683	862	119	4697	5437	1421	27
21878	"	22^45	23^22	3.75	3.43	11.6	2187	4715	1890	569	66	2855	3204	868	16
21879	27.7.85	0:00	0.53	5.55	5.21	15.5	2988	8002	3746	778	121	4347	5427	1331	17
21880	"	0.53	1:48	4.69	4.35	13.4	3216	8002	3536	837	112	4587	5872	1487	14
21881	"	1.48	2.36	4.00	3.69	12.7	2839	6771	2799	645	94	4084	4521	1323	19
21882	"	3.42	4.33	5.11	5.07	15.1	3075	8002	3739	800	121	4456	5413	1433	25
21883	"	4.33	5:00	4.38	4.13	~~4.07~~	~~39~~	2165	940						
21887	"	9^19	9^53	4.77	4.67	13	1975	5065	2326	514	69.2	2853	3467	936	10
21889	"	10^04	10^10	4.20	4.11	11.7	360	850	385	94	10	~~518~~	548	190	1
21891	"	11^43	11^44	4.85	4.83	14.8	16	122	58	4		58	37	7	0
21892	"	11^46	12^42	4.82	4.73	12.9	3226	8002	3772	839	108	4586	5362	1518	21
21893	"	12^43	12^47	4.08	4.07	12.6	195	564	247	50	6	328	309	97	3
21894	"	12^48	13^53	4.03	4.01	12.5	3402	8002	3439	885	111	4807	5338	1574	20
21895	"	13^54	14^32	3.24	3.19	12.1	2183	4825	1997	568	69	2947	3280	916	21
21896	"	15^11	16^02	5.62	4.72	16.0	3042	8002	3906	792	127	4389	5376	1374	28
21897	"	16^02	16^58	4.65	3.82	13.0	3295	8002	3538	858	111	4672	5265	1497	26
21898	"	16^58	17^57	3.83	3.08	12.5	3507	"	3353	913	114	4816	5451	1478	22
21899	"	18^11	18^34	3.02	2.38	11.3	1220	2400	1061	317	36	1666	1818	494	4

PROCESSORS ON/OFF NSO	MIP	TOF	FAMP	⟨L⟩ 10^30 cm^-2 s^-1	Bhabha ∫Ldt nb^-1	∫Ldt Exp. ENERGY	IBM/TAPE OUTPUT	AT RUN START ID (mA)	AT RUN START TOF (V)	ONLINE REJ SUM MUPROC T_e %	ONLINE REJ NORD-50 T,BT_e %	Σ Bhabha	HH	E_BEAM	MAG. FIELD kGauss	Remarks
"	"	"	"	2.43	5.48	9290.20	IBM	1.0	0.5	48	59	62	0	21.800	4.838	Beams Dumped
"	"	"	"	3.71	9.72	9299.92	"	1.3	0.7	43	56	110	3	"	"	
ON	ON	ON	ON	2.70	7.42	9307.34	"	1.0	0.6	45	58	84	1	"	"	
"	"	"	"	2.30	2.47	9309.81	"	~~0.96~~ 0.96	~~0.43~~ 0.43	47	60	28	0	"	"	Beams lost
"	"	"	"	4.47	11.13	9320.94	"	1.3	0.7	42	54	126	9	"	4.847	
"	"	"	OFF	3.28	8.22	9329.16	"	1.15	0.6	45	56	93	2	"	4.842	
"	"	"	"	2.25	6.63	9335.79	"	0.95	0.5	47	58	75	3	"	4.843	
"	"	"	"	1.44	0.18	9335.97	"	0.8	0.45	41	58	2	0	"	4849	
"	"	"	"	1.55	0.97	9336.94	"	"	"	51	61	11	0	"	"	No z-chamber in readout.
"	"	"	"	4.20	0.35	9337.29	"	1.2	0.8	41	53	4	0	"	4836	
"	"	"	"	3.32	4.24	9341.53	"	1.2	0.8	43	55	48	2	"	4826	
"	"	"	ON	2.82	1.41	9342.94	"	1.1	0.6	46	56	16	0	"	4835	
"	"	"	OFF	1.75	2.56	9345.50	"	1.0	.55	47	59	29	0	21.802	4837	
"	"	"	ON	1.15	3.00	9348.50	"	0.8	0.4	50	62	34	4	"	4836	beams dumped.
"	"	"	"	4.37	2.83	9351.33	"	1.35	1.0	39	57	32	0	21.800	4836	
"	"	"	"	3.53	9.38	9360.61	"	1.2	0.7	44	54	105	1	"	4837	
"	"	"	"	2.33	7.25	9367.86	"	1.0	0.55	46	56	82	2	21.802	"	
"	"	"	"	1.29	2.47	9370.33	"	0.8	0.42	50	62	28	1	"	4836	beams dumped.
"	"	"	"	3.82	11.04	9381.37	"	1.3	0.75	43	56	125	1	"	4834	
"	"	"	"	2.63	8.75	9390.12	"	1.0	0.6	45	58	99	2	"	4834	
"	"	"	"	1.81	5.83	9395.95	"	0.9	0.5	48	61	66	3	"	4831	beams dumped
"	"	"	"	3.29	9.72	9405.67	"	1.2	0.7	45	56	110	3	"	4831	
"	"	"	"	2.95	2.56	9408.23	"	1.0	0.5					"		Nord hung up
ON	ON	ON	OFF	2.88	6.36	9414.59	"	1.4	0.7	46	56	72	1	21.802	4832	Nord problem again
"	"	"	"	~~1.69~~	0.80	9415.39	"	1.0	0.5	43	58	9	0	"	4833	beam loss
"	"	"	"	3.77	0.18	9415.57	"	1.4	0.75							Nord 50 Ring up after Be events
"	"	"	"	3.09	8.32	9424.49	"	"	"	43	56	101	3	21.802	4841	Nord 50 OLO ~~Hso~~ Crash
"	"	"	"	2.64	0.97	9425.89	"	1.1	0.55	35	60	11	0	"	4838	
"	"	"	ON	1.91	5.83	9431.72	"	1.0	0.5	45	59	66	2	"	"	
"	"	"	"	1.44	2.47	9434.19	"	0.8	0.4	51	61	28	2	21.800	4809	~~at~~ BKR request, Low field
"	"	"	"	3.36	10.96	9445.15	"	1.2	0.8	44	54	124	1	21.802	4837	
"	"	"	"	2.40	7.69	9452.84	"	1.0	8.6	46	58	87	5	21.802	4837	
"	"	"	"	1.26	4.06	9456.90	"	0.8	0.5	49	60	46	0	21.800	4837	
"	"	"	off	1.97	1.15	9458.05	"	0.6	0.35	50	63	13	0	21.800	4837	beams dumped after refill

17[55] run ended → Nord crashed while starting new data taking run
18[05] we had to restart the NORD. The procedure (described) on the extra piece of paper did not work
18[30] for the last two runs while run summary is printed we received the following error message on the type (system console):
YOPNSO: nosd 50 error: illegal parameter ponter = monitor call
batch job aborted

18[54] Cello phoned. Petra have a power supply problem so injections may take longer than usual.
Power supply will be fixed in the early shift tomorrow.

21[00] run 21900 no events because of NSO problem (an error list on console!)

22[34] Another NSO hangup. Rebuild as directed. Still doesn't work. Master-Clear (Remember to restart FAMP).
Still hangs up. Reconfigure ZDASO — no NORD 50. Hangs up. Master-Clear again. (Forget to restart FAMP — sorry!). Reconfigure without NSO. Works.

00[00] Foster, Olsson Gas check completed.

Run 21909 NSO crash
21910 " "
21911 Running without NSO

There are indications that N-50 indeed has a hardware trig. In order to run test programs in parallel to data taking, we use ZDASØ 7.0.

02.22 JDAS ERROR 45 MP-16 analysis incomplete. YY=1
5[30] Z-chamber trip - Reset OK
06 47 Z-chamber trip Reset and again! and again! 3 times
07 30 Gas check completed
8.00 Matsumura, Naroska
Jan calls Rehlich
8.08 Cello announced new fill in ~10 min.
10.23 Petra lost transmitter, new fill.
Rehlich and Olsson are taking N50 apart.
12.06 Petra has problems with a transmitter, expert is looking on it.
12 30 Several cards/cables in N50 exchanged, but the error was still there (it is a memory error). Soldering proper ground in the N50 crates, and adjusting the 5Volts seems however to have cured it. N50 should be put to hard test in data taking again. ⇒

Should the N50 breakdown occur again, then run without N50: CONF (DAS) ZDASØ Should NOT BE TRUE
Note: In this case, Petra currents and Ebeam must be entered by hand.
Also, no Runsummary, histograms are available. At run end, copy Colourtv info LOG book. Some Numbers are available at the Trigger Box, e.g. All TP, TP reg, T1, T2, T3 acc. etc.
Notice that magnet is fluctuating and cannot be controlled by computer.
14.40 called 3389 gluons magnet, they are going to come.

16[00] Allison, Becker
16[43] Gas check done
16[44] JDAS readout error 33 - Missing CAM branch 6 crate 3 I.D reg ≠ 3 = p. (3 times)
16[48] 3 vertex chamber trips in last 10 min — 2 soft, 1 hard.
16[55] Soft trip of vertex & jet chambers. Also JDAS error 52 - control word 000600. Reason - jet chamber HV fail? Run pause.
16[59] Tried to reset — failed. Noticed magnet was very low. It is now climbing on its own.
17" Energy-änderung — Why? Then HT off & injection again.
18[49] Short run, then Beams lost again.
19[17] Beam - background high. Then sudden drop. Beam lost.
20[21] " again — and lost again! Problems with transmitter.
21[01] Run 21926 started — Vertex chamber would not come on. Seemed to be stopping the ID coming on. So I am running without the Vertex chamber.
21[08] Vertex chamber on.
JDAS 21[17] We noticed YPARA 46: Readout pattern 77737, should be 77777. This has been so since about 15[00]. 'Phoned Howard. We stopped the run & reset it & restarted.
22[53] Several JDAS READOUT ERRORS (21907 and) 45 - MP-16 analysis incomplete YY=1
23[28] Magnet high at 7616 A !!! Turned it down to 7495.

000 Ramcke + Komamiya
031 Z-chamber trip → reset OK
033 gas check ok
042 Z-chamber hard trip reset ok.
047 Z-chamber trip
048 ID hard trip → VTX soft trip + Zch hard trip
1:35 Z-chamber hard trip
1 40 - " -

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Run	date	start	stop	at run start I^+	at run start I^-	dead time (%)	time (sec)	records in	records out	All $\times 10^6$	T3 Rej $\times 10^6$	T_1 Acc Sum	T_2 Acc Sum	T_1 T_2 t 2 Ecm > 6 GeV	T_2 T_2 t 1 $27 \cdot E_{cm} \geq 27$
21901	27.7.85	21.05	21.58	5.08	4.90	14.7	7132	8002	3746	815	119	4522	5397	1376	19
21902	"	21.59	22.32	4.33	4.17	14.8	1956	4965	2293	509	75	2868	3216	878	12
21903,4,5 are junk.															
21906	"	22.52													
21907	~~28.7.85~~		0.20					2900							
21908	28/7.85	00.26	00.38	2.94	2.83	14.8	711	1661	693	185	27	1048	931	318	4
21909	"	01"	01.3	5.21	5.20	16.2	9~~13.10~~	272	134	24	4	133	167	33	2
21910	"	01.16		5.13	5.05	16.2	229	745	386	60	10	374	471	104	3
21911	"	01.29	2.18	4.84	4.93	17.6		8002							
21912	"	02.22	03.22	4.12	4.20	13.5		8002							
21913	"	03.26	04.21	3.47	3.54	12		8002							
21914	"	04.23	0.437	3.00	3.05	11.5		8002							
21915	"	05.24	06.15	5.21	5.39	16.4		8001							
21916	"	06.17	07.04	4.45	4.51	14.0		7034							
21917	"	07.10	~08	3.83	3.96	14.4		7887							
21918	"	08.12	8.16	3.26	3.26	14.5		~~944~~	371						
21919	"	8.55	9.04	4.03	4.03	12.4									
21920	"	9.09	7000	4.45	4.08	13.8		7807							
21921	"	15.27	15.33	4.36	2.94	14.4	263	721	367	68	9.8	378	587	129	9
21922	"	16.13	17.10	4.58	4.55	10.9	2946	7421	3380	766	83	9988	5747	1357	27
21923	"	18.19	18.31	5.53	5.45	13.0	708	2092	1016	184	23	1128	1507	363	7
21924	"	19.20	19.20	5.60	5.57										
21925	"	20.26	20.29	5.37	5.17	11.5	116	329	175	29	3.4	189	250	53	0
21926	"	21.01	21.11	5.49	5.24	13%	600	1674	836	156	20	899	1300	290	5
21927	"	21.14	22.04	5.26	4.99	16.7	2983	7846	3783	776	130	4263	5541	1435	22
21928	"	22.34	22.35	5.42	5.40	10.5 ~~short~~	~~44 obs~~	17.0 ~~bad~~	~~Ok~~ 86	11	1	94	81	17	0
21929	"	22.35	23.26	5.4	4.86	18	2966	8002	3840	771	138	4357	5526	1441	20
21930	"	23.26	0.20	4.57	4.02	15.3	3211	8001	3559	835	128	4607	5471	1466	28
21931	29.7.85	0.21	1.29	3.88	3.33	12.3	3451	8002	3369	898	110	4828	5375	1506	21
21932	"	1.32	2.06	3.23	2.80	12.8	1563	3450	1410	355	52	2103	2271	648	9
21933	"	2.32	2.42	5.02	4.65	27.0	340	843	415	88	24	407	613	131	6
21934	"	2.50	3.46	4.79	4.34	18.2	2971	8001	3765	632	141	4429	6367	1512	28
21935	"	3.46	4.13	3.44	2.58	11.8	1477	3360	1341	339	46	2045	2278	670	10
21936	NO EVENTS														

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Processors NSO	Processors HiP	Processors TOF	Processors TAMP	on/off	$\langle L \rangle$ 10^{30} cm^{-2} s^{-1}	Blubbles $\int L dt$ nb^{-1}	$\int L dt$ exp/energy	1977/ tape output	At run start ID (μA)	At run start TOF (V)	On line Rej Sum T_1 PRoc T_2(%)	On line Rej Nord-SO T_1 T_2 (%)	Ebubble	MH	Ebeam	Mag. field -14 gauss	Remarks
on	on	on	on		3.35	8.04	946.09	1977	1.2	0.8	45	56	91	5	21.00	4834	
"	"	"	"		2.44	4.72	9470.81	"	0.9	0.6	46	57	50	3	21800	"	NSO Crash.
~~OFF~~	~~ON~~	~~ON~~	~~OFF~~						0.4	0.5							No run summaries.
OFF	ON	ON	OFF			?			0.4	0.5							2DASØ (NO NSØ)
						?											
ON	"	"	"		1.19	0.88	9471.69	"	0.4	0.5	49	63	10	0	21.80	"	Backup A from 1/7-85
"	"	"	OFF		4.94	0.18	9471.87	"	1,2	0,9	38	57	2	0	-4-	4831	-"- -"- -"-
"	"	"	OFF		3.52	0.88	9472.75	"	0~~8~~1.1	0.8	38	52	10	0	"	"	" " "
OFF	"	"	OFF		3.09	8.94	9481.69	"	0.8	0.6						"	NO NOKOSO
"	"	"	"		2.26	7.13	9488.82	"	0.6	0.5						"	" "
"	"	"	"			?		"	0.5	0.4						"	" "
"	"	"	"		1,04	0.86		"	05	0.4						"	" "
"	"	"	"		3.26	9.13		"	1.0	0.4						4831	~~NOKOSO ON~~ "
"	"	"	"		2.55	6.87		"	0.8	0.75					21802	4831	NOKO OFF
"	"	"	"		1.74	5.58		"	0.6	0.55					21802	4831	"
"	"	"	"		1,28	0.17		"							4	4	NSO ~~#~~. (2DASØ)
					3.26	1.74		"									
"	"	"	"		2.40	7.73	9520.90	"	0.8	0.8					21800	4834	Hard off
ON	ON	ON	ON		1.59	0.44	9521.34	"	1.3	1.3	48	57	5	0	21802	4837	Readout 77737 beams lost
"	"	"	"		3.05	8.57	9529.91	"	1.2	1.6	48	56	97	0	21800	4825	Some magnet glitches Beam lost 77737
"	"	"	4		4.44	2.92	9532.83	"	1.2	1.3	41	53	33	0	21.802	4831	Beams lost 77737
																	Beams lost (~~no~~ 77737 event)
"	"	"	"		~~4.56~~ 4.53	0.35	9533.18	"	1.3	1.5	52	50	4	0	21800	4833	Beams lost 77737
"	"	"	"		4.35	2.83	9536.01	"	1.3	1.1	44	51	32	3	21.802	4824	Note 77737
"	"	"	"		3.58	9.01	9545.02	"	1.2	1.0	45	54	102	1	21.802	4834	Readout pattern bank A beams lost 77737
"	"	"	"		4.22	0.27	9545.29	"	1.2	0.9	27	55	3	0	21802	4828	V short run but OK.
"	"	"	"		3.48	10.42	9555.71	"	1.2	0.9	45	55	119	2	21800	4812	
"	"	"	"		2.52	7.78	9562.49	"	1.0	0.6	47	58	88	4	21802	4907	
"	"	"	"		1.79	5.57	9568.06	"	0.8	0.5	49	60	63	1	21802	4830	
"	"	"	"		1.36	1.57	9569.63	"	0.7	0.4	49	62	18	0	21.800	4835	Beams lost
"	"	"	"		3.27	0.88	9570.51	"	1.0	1.3	42	55	10	0	21.00	4835	PRUN changed
"	"	"	"		2.19	4.95	9575.46	"	0.8	0.6	47	55	56	2	21.802	4834	
"	"	"	"		0.99	1.15	9576.61	"	0.8	0.5	51	63	13	1	21.800	4834	Beams dumped

1 50 all chambers tripped
2 00 2-chamber trip (hard)
2 30 At the start of run 21933
message comes out on the line printer
MUON CR = 1 ~ 13 NO RESPONCE

MUON EXPERTS HAVE TO READ HERE! ←

We looked at the μ crate in the hardware room.
The fan was noisy → we changed the fan of the CAMAC crate
→ the old fan was noisy because a ~~the~~ small sheet of paper was stucked on the fan otherwise, looks ok.
→ start new run the same messages MUON CR=1~13 NO RESPONCE on the line printer.
→ looked at novel histogram for μ-chamber : looks O.K.

3 33 2-chamber hard trip
3 52 -"-
4 45 Soft trip (ID + VTX)

7 08 3 chambers tripped, Beams lost.

8 00 W. Bartel & H. Mills
8 15 Gas check done
8 12 New Pill ready
8 32 Beams to be dumped - then lost & all chambers trip
Apparently a magnet power supply has failed = estimated 1/2 hrs
1 55 Fan fail alarm on a FADC crate - call BPCH expert via bleep.
Bleep raises R. Ramcke - he's just gone off night shift - it a bit bad that he gets woken!
FADC crate fan exchanged.
S. Betke investigating missing wire in ID → repaired!
I built some print statements into MPARA to precise the error. The error does not occur now!
Everything seems ok with the μ-crate... J.O.
14 30 Magnet control operational again. Report any problems with the control unit to E. Elsen - f

Operating system and JDAS rebuilt to allow for an expanded COMMON

DESY - telephone service is informed about our problems with the telephone bill. They promised to repair it.

14 50 Beams ready
BPch trips
Again ... we leave it okt. Cannot reach any by telephone. Send CRH to canteen. This works well.

R-Z chamber trips twice

16.00 Foster, Naroska
Beate departs for gas check - probably never to be seen again.....

RT-Loader destroyed. The system needs to be regenerated. Until then NO HISTOGRAMS
Other computer also other beams dumped - he is logged into IBM.

↑ Figment of imagination - No interlock to ~~N150~~ rebuild N50. CELLO link OK.

16 50 IBM link goes down also TASSO. Claus arrives to be beside to rebuild N50 system.
18 00 System rebuild, things OK again.... J.O.
21 31 Beam at last!
The problem with PETRA is that there are instabilities at injection energy which throws out the beam before them they can fill.

23 36 2-chamber Trip.

00 00 30th July 1985 Allison & Lauritzen
01 28 VERTEX chamber gas alarm - valve ~~failure~~ failure. Followed instructions. PLEASE NOTE GREEN BUTTON LAMP is broken - I had to guess it should have been on.
02 36 Beam adjustment and loss. PKR ~~TASSO~~ wants machine access - transmitter inspection.
03 53 PKR/TASSO phoned - they must change a valve - takes another 30 minutes or more
06 00 Beam
07 30 Short break - Sion beams lost

14 30 ~~Red~~

These special bulbs are not available at the DESY stock... so please wait patiently until we get spare parts.
Meanwhile you may use the push buttons on the rear side of the rack.
HK

RUN	DATE	START	STOP	AT RUN START I^+	AT RUN START I^-	DEAD TIME [%]	TIME [sec]	REC IN	REC OUT	ALL $*10^6$	TØ REJ $*10^6$	T_1 ACC SUM	T_2 ACC SUM	T_1 BIT 2 $E_{tot}>66eV$	T_2 BIT 17 2T-E 22TR
21937	29.7.85	4.43	4.59	5.02	4.50	12.3	730	1777	799	190	23	1020	1232	340	7
21938	"	5.36	6.28	5.38	5.23	15.7	3047	8002	3672	793	125	4372	5482	1478	22
21939	"	6.28	7.09	4.57	4.44	14.0	2333	5995	2623	607	85	3557	3829	1150	17
21940	"	8^{14}	8^{33}	4.95	4.84	15.4	1010	2556	1196	262	60	1414	1778	461	6
21941	"	14^{52}	15^{44}	5.69	5.78	13.6	2853	8002	3773	742	101	4495	5727	1561	37
21942	"	15.44	16.39	4.92	4.90	17.6	2924	8002	3721	761	134	4268	5309	1430	17
21943–21949	do not exist														
21950	Illegal FETC data														
951	doesn't exist														
21952	"	17.50	18.37	3.37	3.44	13.2	2749	6271	2592	714	94	3798	4181	1334	13
21953	"	21.33	22.26	4.50	4.65	16.0	3139	8002	3593	816	130	4546	5325	1559	18
21954	"	22.2	23.22	3.87	3.85	13.0	3337	8001	3369	868	113	4814	5271	1677	18
21955	"	23^{23}	00^{22}	3.33	3.32	13.3	3461	8002	3512	900	120	4953	4960	1633	17
21956	30/7/85	00^{23}	00^{32}	2.87	2.86	11.4	522	1165	470	135	15	723	735	226	1
21957	"	01^{41}	02^{28}	4.94	4.96	14.9	2807	7542	3480	729	108	4219	4831	1521	21
21958	"	6^{04}	6^{54}	5.17	5.23	17.2	3007	8002	3717	781	134	4117	5515	1447	26
21959	"	6^{54}	7^{04}	4.55	4.61	14.2	541	1422	647	140	19	783	967	255	6
21960	"	10^{51}	11^{02}	5.19	5.23	19.3	612	1622/75	752	159	31	812	1216	256	14
21961	"	12.07	12.55	5.5	5.6	12.2	2853	8001	3687	742	90	4492	5743	1569	28
21962	"	13.00	14.06	4.68	4.75	14.8	3138	8002	3547	817	121	4528	5468	1512	21
21963	"	14^{06}	15^{02}	3.87	3.94	14.3	3329	8002	3486	867	124	4665	5312	1510	22
21964					JO	NK									
21965	"	16.26	17.17	5.21	5.17	15.8	2991	8002	3680	778	123	4309	5237	1484	25
21966	"	17.17	17.45	4.50	4.47	14.5	1632	4301	1937	425	62	1501	2720	871	14
21967	"	17.54	18.08	4.04	4.02	14.2	848	2291	1040	221	31	1305	1415	399	6
21968	"	18.11	18.24	3.84	3.82	14.6	699	1755	784	182	26	1031	1112	343	6
21969	31/7/85	3.34	4.22	6.01	6.15	22.9	2762	8002	4001	719	165	3942	5254	7383	40
21970	"	4.22	5.13	5.09	5.24	17.6	2985	8002	3817	777	137	4308	5304	1479	28
21971	"	5.13	6.06	4.35	4.49	16.3	3157	8002	3725	820	133	4375	5312	1450	18
21972	"	6.06	7.05	3.72	3.84	12.4	3496	8001	3448	909	113	4683	5521	1493	15
21973	"	7.05	8.04	3.18	3.28	14.2	3501	8001	3532	912	129	4733	4948	1419	18
21974	"	8.05	8.35	2.74	2.84	12.1	1785	3917	1563	465	56	2383	2555	759	10
21975	"	9.12	10.00	5.32	5.77	15.7	2848	8001	3642	742	116	4265	5695	1501	27
21976	"	10.02	10.51	4.54	4.90	16.2	2932	8002	3495	764	124	4291	5300	1449	22

PROCESSORS on/off N50	MIP	TOF	TAMP	$\langle L \rangle$ 10^{30} cm^{-2} s^{-1}	BHABHA $\int L\,dt$ nb^{-1}	$\int L\,dt$ Exp ENERGY	IBM/TAPE OUTPUT	AT RUN START ID [mA]	AT RUN START TOF [V]	ONLINE REJ SOM MIPROC T_2 %	ONLINE REJ N-50 T_1 & T_2 %	Σ_{BHABHA}	MH	E_{BEAM}	MAG FIELD -10 GAUSS	REMARKS
ON	ON	ON	ON	1.87	1.15	9577.76	IBM	1.1	0.9	49	58	13	0	21.800	4833	Beams dumped
ON	ON	ON	ON	3.35	857	9586.33	"	1.2	0.9	44	57	97	3	"	4832	
"	"	"	"	2.58	477	9591.10	"	1.0	0.55	46	59	54	1	"	4832	Beams lost
"	"	"	"	2.73	2.47	9593.57	"	1.2	1.0	45	56	28	1	"	4837	Beams lost
"	"	"	"	4.02	9.19	9602.76	"	1.3	0.8	43	54	104	2	"	4843	
"	"	"	"	2.93	8.39	9611.15	"	1.2	0.7	42	56	95	2	"	4842	
"	"	"	"	1.70	3.80	9614.95	"	0.8	0.5	50	61	43	0	"	4841	beams dumped
"	"	"	"	2.67	7.69	9622.64	"	1.1	1.1	46	58	87	4	"	4841	
"	"	"	"	2.12	7.69	9630.33	"	1.0	0.5	48	60	87	2	"	4841	
"	"	"	"	1.55	6.27	9636.60	"	0.8	0.4	49	59	71	3	"	4841	
"	"	"	"	1.28	0.62	9637.22	"	0.7	0.34	49	63	7	0	"	4841	Beams dumped
"	"	"	"	3.23	9.10	9646.30	"	1.2	0.7	42	57	103	2	"	"	~~Energy~~ Beams lost
"	"	"	"	1.89	4.77	9651.07	"	1.3	0.84	43	57	54	1	"	4839	
"	"	"	"	1.39	0.35	9651.42	"	1.1	0.73	46	58	4	0	"	"	Beams lost
"	"	"	"	1.86	0.97	9652.39	"	1.4	1.0	42	56	11	0	21.802	4844	half lost, half dumped.
"	"	"	"	3.92	11.04	9663.43	"	1.4	0.8	46	36	125	1	21.802	-4,844	
"	"	"	"	2.85	8.78	9671.91	"	1.2	0.63	45	58	96	1	21.802	4844	
"	"	"	"	2.03	6.89	9678.80	"	1.0	0.5	47	59	78	3	21.800	4843	
																Beams Dumped
"	"	"	"	3.18	8.39	9687.19	"	1.2	0.8	42	57	45	5	21.802	4845	
"	"	"	"	3.17	4.68	9691.87	"	1.1	0.6	45	57	53	2	21.802	4844	N50 und Memory out of range.
"	"	"	"	2.71	1.41	9693.28	"	1.0	0.5	43	58	14	1	21.802	4844	
"	"	"	"	2.29	0.97	9694.25	"	1.0	0.5	46	59	11	1	21.800	4845	half lost, half dumped
ON	ON	ON	ON	4.37	10.087	9705.12	IBM	1.6	1.0	39	53	123	3	21.800	4844	
"	"	"	"	3.72	10.87	9715.99	"	1.3	0.8	43	55	123	0	21.802	4847	
"	"	"	"	2.75	8.75	9724.74	"	1.2	0.6	44	57	99	3	21.800	4848	
"	"	"	"	2.02	5.65	9730.39	"	0.9	0.4	49	60	64	2	21.802	4847	
"	"	"	"	1.54	6.45	9736.84	"	0.8	0.4	48	60	73	1	21.802	4847	
"	"	"	"	1.28	3.00	9739.84	"	0.85	0.35	49	63	34	2	21.800	4847	Beams dumped
"	"	"	"	3.71	10.42	9750.26	"	1.4	1.05	41	56	118	4	21.800	4847	
"	"	"	"	3.00	7.24	9757.50	"	~1.2	~0.8	42	59	82	6	21.800	4847	

30/7/85

8^{00} K. Kawagoe and G. Zorn on shift

8^{10} Gas Check Done

8^{25} Short break Magnet down to → 4000 A

9^{10} Magnet again to → 7500 A

10^{45} Beams ready. start Run

10^{55} VTX ch. trip. ... TOF rate = 1.0 ν , ID current = 1.4 μA

11^{00} ID & VTX ch. soft trip ⟹ PEP told us "Switch off HV".

☆ Sachio (ID on call today) is at home. In case of ID trouble, phone to his home.

1206-1300 - Beampipe chamber trip.

4) Yspy detected HT1 times from 1206 to ← WHAT did Yspy detect?

13^{20} Z chamber tripped. ... trip. (twice) → Mr. Hodgecock came in.

13^{25} VTX ch. Valve failure.

1329 Beam chamber trip reset

13^{50} pause Run for Z-chamber HV test.

14^{30} One set of z-chamber dividing wires found to be drawing current. Cable pulled for this cell. We hope this was the cause of the recent trips. If the z-chamber trips again BY ITSELF (ie not accompanied by I/A trip) please call Rutherford office. SLC/CRH (890 46 95)

R21964 could not be started. because,

Console:
YPARA 31 ; VTX-Processor cannot be started, IDUX = 0
(CAMAC-Problem or Unloaded processor)
BRANCH 1 CRATE 2
... RELOAD THE PROCESSORS AND TRY AGAIN...
→ and then worked!

16^{00} FOSTER-MAGNUSSON ON SHIFT.
Gas Check completed.

16^{30} TOF HV error MFR53 Chan 9 2750→2720 ~~2700~~
Called Namba/~~Kadachi~~ - ~~not in~~ - she will come later

[Howard in RAL flat after 8pm]

16^{58} Error 46 MP-16 out of sequence YY=1), Again HV error 2750 → 2756. Same channel (MFR53 Ch 9)
(Phone Okano when beams up 4!) " 2750 → 2744 "

17 24 Useful TOF histogram - second normal.

17^{50} NSO - Problem (Memory out of range) several ABORT-NSO, LOAD NSO → O.K.

18 09 Run 21967 normal up - no events ... Pause/restart/continue has no effect. → stop run, start new run O.K.

19^{30} Extensive testing of NSO shows no error ... J.O.

1955 Vacuum problem on PETRA - no time limit known. Magnet Down to 4000

20 20 Now we get "short Break" indication.

22 05 " " " "Break" notice. - restart at 22:30

22:30 " " 23:00

23 04 They try injection.

31/7/85 0^{00} Hellenbrand & Bagemann on shift

0^{20} Gas check done. ok.

0^{25} Message on PETRA-TV "TROUBLE WITH SYNCHROTRON RESTART ca. 2:30 a.m."

0^{26} Magnet to 500 Amps

3^{15} Injection, Magnet back to 7500 Amps

7^{44} Call from TASSO: LINAC II problem, impossible to inject, keep current full

8^{00} Allison, Komamiya on shift

8^{13} Gas check reveals O_2 > 2.5 * normal - will call muon expert. Done ✓

9^{15} VTX chamber hard trip

9^{20} "

9^{30} "

Please notify Jan Olsen FITOLS Petersen FILLAU when beam in beam. Done ✓

10^{30} JDAS read error 33 : Missing LAM Br=2, Cr=4 TOF2 counts

11^{00} ID, VTX chambers tripped Beam lost

11^{05} modification to ZDAS - new command BPCH-READOUT ON or OFF to set the readout pattern and CAMAC online crates correctly if FADCs have to be turned off due to heating/cooling trouble (nice feature, thanks Paul)

The reason why the operator has to enter PETRA settings ~~with~~ when running with ZDAS0 (i.e. no NORD-50) is known and cured. It seems to date back several years when the FAMP task was installed where the HAIL task used to be - the HAIL task was moved to end of the list but the pointer to check for its existence was not updated. Hence no FAMP task (therefore from NORD-50) meant no start of the XHAIL task - nice one.

12^{34} Overheat on ~~trigger~~ latch CAMAC crate - Massbender coming

14^{35} CELLO has problem on magnet - they want to adjust the magnetic field → better watch our background.

RUN	DATE	START	STOP	AT RUN START I+	AT RUN START I-	DEAD TIME (%)	TIME (sec)	RECORD IN	RECORD OUT	ALL x10^6	TΦ REJ x10^6	T1 Acc SUM	T2 Acc SUM	T1 Bit2 E_LU>6GeV	T2 Bit17 2T, E_T>2.2GeV
21977	31.7.85	10^51	11^00	3.91	4.23	14.5	509	1400	595	133	19	791	874	262	7
21978	"	14^57	15^25	4.86	4.63	12.4	1644	4174	1732	428	53	2271	2996	785	15
21979	NO EVENTS (only pedestal events)														
21980	"	16^13	16^57	5.62	5.71	17.1	2622	8000	3784	683	117	4041	5274	1396	21
21981	"	16^58	17.47	4.76	4.25	15.4	2944	8001	3604	766	117	4341	5355	1421	22
21982	"	17^50	18^49	4.14	4.22	18.9	3197	8001	3487	831	115	4603	5370	1578	22
21983	"	18^49	19^28	3.5	3.58	13.6	2127	4570	2047	553	75	2932	3241	959	10
21984	"	22^15	22^22	4.99	3.78	12.7	369	951	465	96	12	517	625	143	2
21985	"	22^23	23^21	4.87	3.69	14.0	3235	8002	3460	841	117	4562	5290	1523	19
21986	1/8/85	23^22	0^09	4.18	3.11	12.6	2836	6758	2832	738	93	3953	4549	1357	20
21987	1/8/85	01^09	02^00	5.01	4.87	15.7	3034	8001	3697	789	124	~~4393~~	5353	1434	21
21988	"	02^01	02^55	4.30	4.11	13.2	3255	8002	3489	847	112	4656	5437	1584	29
21989	"	02^56	03^57	3.67	3.52	11.7	3566	8002	3275	928	108	4784	5447	1464	17
21990	"	03^58	04^07	3.12	2.99	14.0	468	1086	467	122	17	652	665	198	3
21991	"	5^04	5^49	4.47	4.49	12.9	2713	6493	3002	705	91	3593	4514	1067	18
21992	"	6^34	6^56	4.18	3.09	13.5	1292	3104	1398	336	45	1728	2209	480	9
21993	"	8^02	8^10	4.84	4.58	20.1	251	741	387	65	13	331	486	106	6
21994	"	8^02	8^54	4.83	4.83	16.8	3109	8001	3765	807	136	4158	5707	1281	25
21995	"	8^55	10^49	4.11	4.19	15.3	3228	8002	3705	840	128	4481	5627	1424	26
21996	"	10^49	11^14	3.46	3.58	12.3	1437	3418	1430	374	46	2058	2288	621	6
21997	"	12^05	12^56	4.82	5.06	14.8	3066	8001	3736	788	118	4334	5440	1368	18
21998	"	12^57	13^52	4.18	4.34	13.5	3305	8002	3525	820	117	4577	5483	1349	18
21999	"	13^53	14^53	3.56	3.70	12.2	3625	8002	3347	844	115	4860	5363	1467	17
22000	"	14^54	15^13	3.03	3.16	11.6	1097	2471	986	285	33	1562	1537	454	17
22001	"	16^19	17^10	5.22	4.82	14.3	3057	8002	3727	794	114	4332	5376	1344	25
22003	"	17^12	18^11	4.45	4.10	13.2	3349	8002	3592	871	115	4674	5422	1426	15
22004	"	18^11	18^18	3.78	4.47	12.4	343	891	390	89	17	523	544	166	4
22005	"	18.56	19.23	5.25	5.45	16.2	1347	3895	1875	350	57	1957	2593	606	6
22006	"	19.24	20^14	4.81	5.00	15.5	2986	8002	3695	776	120	4401	5273	1383	18
22007	"	20^15	20^19	4.12	4.29	13.7	250	670	293	65	8	365	426	125	3
22008	"	21.25	22^10	5.51	5.58	17.4	2692	8002	4102	700	121	4390	5026	1226	12
22009	"	22^11	22^19	4.75	4.83	36.3	415	1687	1174	107	39	1213	629	129	1
22010	"	22^19	23^11	4.64	4.71	14.3	3091	8002	3611	804	114	4498	5361	1417	18
22011	"	23^11	23^55	3.96	4.04	13.2	2630	6340	2675	684	90	3756	4229	1166	11

PROCESSORS ON/OFF NSO	MIP	TOF	FAMP	<L> 10^30 cm^-2 s^-1	Bhabha ∫L dt 46-1	∫L dt EXP. ENERGY	IBM/TAPE OUTPUT	At Run Start IO (μA)	At Run Start TOF (V)	ONLINE REJ IMPRec T2 %	ONLINE REJ NORDSO T1·T2 %	Σ Bhabha	MH	E_beam	Mag Field kGauss	Remarks
ON	ON	ON	ON	2.62	0.97	9758.47	IBM	~~1.6~~	0.6	42	61	11	0	21.800	4847	Beams lost
"	"	"	"	1.84	2.83	9769.30	"	~~1.~~ ?	1.1	44	61	32	0	21.802	4838	Beams lost (Problems with VTC-HV)
"	"	"	OFF					1.5	0.9							
"	"	"	"	4.35	10.60	9770.90	IBM	1.5	0.9	38	56	120	2	21.800	4838	
"	"	"	ON	3.92	8.22	9779.12	"	1.3	0.65	43	58	93	3	"	4838	
"	"	"	"	2.39	8.75	9787.87	"	1.1	0.52	46	60	99	0	"	4839	
"	"	"	"	1.62	2.92	9790.79	"	1.0	0.44	47	61	33	0	"	4838	Beams dumped
"	"	"	OFF	3.43	0.44	9791.23	"	1.3	0.65	44	55	5	0	"	4841	
"	"	"	ON	8.49	8.06	9799.29	"	1.0	0.48	45	59	90	1	"	4840	
"	"	"	"	2.00	4.59	9803.88	"	1.0	0.5	47	60	52	1	21.802	4841	Beams dumped due to low lumi
"	"	"	"	3.61	10.34	9814.22	"	1.2	0.7	43	56	117	3	21.800	4841	
"	"	"	"	2.65	7.86	9822.08	"	01.0	0.55	47	59	89	2	21.800	4840	
"	"	"	"	1.86	5.83	9827.91	"	0.9	0.45	49	61	66	0	21.800	4840	
"	"	"	"	1.79	0.62	9828.53	"	0.8	0.4	46	60	7	0	21.800	4840	Beams dumped – low lumi.
"	"	"	"	2.85	6.36	9834.89	"	1.1	0.6	46	56	72	1	21.802	4839	half lost, half dumped
"	"	"	"	2.07	2.92	9837.81	"	1.0	0.8	47	58	33	1	21.800	4841	beams dumped
"	"	"	"	3.23	0.71	9838.52	"	1.4	1.0	37	51	8	0	21.802	4841	beams lost
"	"	"	"	2.87	8.66	9847.18	"	1.3	0.75	43	56	88	4	21.802	4840	
"	"	"	"	2.60	6.98	9854.16	"	1.1	1.2	46	56	79	3	21.800	4841	
"	"	"	"	2.09	3.00	9857.16	"	0.9	0.6	49	61	34	0	21.800	4840	beams dumped.
"	"	"	"	3.37	10.43	9867.59	"	1.2	0.7	43	56	118	4	21.802	4841	
"	"	"	"	2.57	9.36	9876.95	"	1.0	0.6	47	58	106	2	21.800	4843	
"	"	"	"	1.84	6.01	9882.96	"	0.9	0.45	49	61	68	1	21.800	4844	
"	"	"	"	1.50	1.77	9884.73	"	0.8	0.4	49	63	20	1	21.800	4844	beams dumped.
"	"	"	OFF	3.32	9.19	9893.92	"	1.2	0.7	41	56	104	4	21.800	4844	Run 22002 is rubbish because of VTC-Proc. Problem
"	"	"	"	2.51	9.54	9904.46	"	1.1	0.55	46	58	108	0	"	"	
"	"	"	"	2.16	7.33	9905.79	"	0.95	0.46	43	60	75	1	"	4842	Beams lost.
"	"	"	OFF	4.13	6.07	9911.80	"	1.36	0.78	38	55	68	1	"	4844	Run stopped to switch on FAMP
"	"	"	ON	3.15	8.75	9920.55	"	1.25	0.7	43	57	99	2	21.802	4843	
"	"	"	"	2.91	0.62	9921.17	"	?	?	45	60	7	1	21.802	4841	Beams lost
ON	ON	ON	OFF	3.97	9.98	9931.15	"	1.40	0.8	40	51	113	4	"	"	
"	"	"	ON	2.50	1.33	9932.48	"	1.20	0.6	39	31	15	2		4839	High trigger rate – poor beam?
"	"	"	"	3.01	8.83	9941.31	"	1.20	0.0	44	57	100	2	21800	4839	
"	"	"	"	2.29	4.59	9945.90	"	?	?	47	60	52	2	21802	4840	Beams dumped

14[35] 31/7/85 Beams lost. CELLO magnet has been off for ½ hour.

16[00] Kawagoe Dietrich
(continued)

18[25] VTX ch. tripped
18[35] Missing LAM Br=2, Cr=3 occured ~10 times
18[40] Gas feed done
19[10] IBM down for 10 Min.
23 55 Gas check completed 44.

1/8/85 FOSTER / MAGNUSSON on shift (again).

00 05 Luni is very low so plan TASSO to ask for new fill - they agree.
01 08 First luminosity in August.
01.11 TOF hi voltage error reappears MFR 53 ch. 9 2.744 should be 2.750 (Start of Run 21987)
JDAS error 45 MP-16 and incomplete; YY=1
02.02. Again TOF error MFR 53 ch 9 (2.749kV) (Start of Run 21988).
02.03 VTCH hard trip twice / 3 times
02.10 JDAS error 74 wrong LAM br. 1 c. 1 BF chamber
02 21 " error 45 - MP-16 and incomplete; YY=1
02 33 " " " (2.760 kV)
02 46 " " 45 " " " "
03 03 " " 46 " out of sequence; "
03 53 R-Z chamber Trip
03 59 " " " (2.755 kV)
06 41 We discovered a VTCH value failure alarm by accident (i.e. walking into rucksack through the hall and tearing the burner from the rucksack!). The PC was quiet!
← VTCH - experts, please note
8.00 Bethke + Schmitt on shift
9.00 Gas check done

16[00] Adloff, Krehbiel on shift

At start of Run 22002: VTXC - Processors cannot be started. See console printout
17[30] Errors: JDAS 33 Miss. LAM br. 3 C. 1 : ID Current
Then several times error 53 Sup era warning flg PARMS 00002 740204 (oct)
17[45] Pause - Continue fixed it.
Err. 33, Miss LAM 2 - Cr. 4 TOF2 Counters
17[55] 46 MP-16 out of sequence.

18[25]. Beams lost. Jackpot hit. All chambers tripped. PETRA didn't notice it until we rolled 3 min. later.
18[55] Beams back again and HV up
22[10] At the beginning of Run 22009 we noticed a very high dead time, but good background rates. The J.O. Triggers (T1 bit 14) ~~the were once so~~ were dominant. Note the funny φ distribution of Barrel groups, which is very different from the usual comic-dominated distribution. After renormalization of conditions we decided to stop the run and start a new one. Petra admitted no action, no occurencies during the time in question.
Was there a G.U. monopole catalyzing proton decays roving through the lead glass?

2/8/85
0:00 Bartel, Matsumura on shift
0:15 Gas check done
08.00 Burkert Kawata & Clarke on shift.
08.10 Gas check done.
08.15 Short break - PKR wish to clean up klystron. (~ 45 minutes predicted)
09.30 VTX chamber trip.
10[12] "No evts for ..." Try PAUSE/CONT not successful → STOP RUN/ Start again - o.k.
12[11] JDAS err. 33 - missing LAM branch 2 cr. 4 : TOF2 counters
12[20] " " 46 - MP16 out of seqn.; YY = 1
Occassionally get "no events", PAUSE/CONTINUE solves,
* HEM says that IBM will go down for 1 hour starting at 18.00hrs — take data on tape.

16[00] Kawagoe + missing Dietzman (he will come later)
16[30] Gas check done.
18[00] IBM down, Beams dumped.
18[42] IBM up. no need to write data on Tapes.
19[54] "no events" pause/continue didn't help. stop the current run and started a new run. → ok.
save

3/8/85
0:00 Hedgecock & Magnussen on shift
0:10 gas check done
0:10 VTCH soft trip
2:32 — " —
2:39 ID & VTCH tripped (part of the beams lost)
2:43 "DITTO"
2:48 "DITTO" 2.51, 2.57
5 44 VTCH SOF TRIP.
5 50 Z-CHAMBER TRIPPED.

RUN	DATE	START	STOP	At Run Start I+	At Run Start I−	DEAD TIME (%)	TIME (sec)	Records IN	Records Out	All ×10⁶	T0 Rej. ×10⁶	T1 Acc Sum	T2 Acc Sum	T1 Bit 2 EL6>6 GeV	T2 Bit 17 2T·Ea ≥ 2TP
22012	2.8.85	0:55	1:54	5.18	4.83	15.5	3114	8001	3631	810	125	9795 ~~4578~~	5311	1332	21
22013	"	1:54	2:49	4.50	3.94	14.2	3226	8001	3614	839	119	~~4578~~	5560	1482	14
22014	"	2:49	3:46	3.67	3.38	12.1	3383	7758	3262	880	107	4672	5217	1496	19
22015	"	4:18	5:08	5.20	5.34	18.0	2974	8002	3837	774	139	4167	5521	1354	27
22016	"	5:09	6:00	4.44	4.57	14.3	3057	8001	3602	796	114	4545	5300	1472	19
22017	"	6:00	6:55	3.80	3.92	13.0	3532	8002	3456	846	110	4779	5309	1505	19
22018	"	6:55	7:54	3.27	3.36	11.9	3538	8002	3330	920	109	4953	5243	1625	20
22019	"	7.55	8.01	2.71	2.86	11.6	340	796	333	38	10	981	493	161	1
22020	"	8.57	9.00	6.12	6.25	18.5	90	402	191	23	4	280	181	28	4
22021	"	9.29	10.13	6.19	5.89	26.1	2516	7196	3582	654	164	3527	4848	1081	28
22022	"	10.16	11.04	5.22	5.06	18.3	2887	8002	3941	751	137	4246	5430	1387	27
22023	"	11.04	11.58	4.41	4.29	15.8	3118	8002	3702	812	128	4592	5441	1553	30
22024	"	12.00	12.55	3.69	3.59	12.8	3291	8002	3437	856	109	4831	5219	1519	21
22025	"	12.56	13.20	3.11	3.02	11.9	1435	3296	1364	373	44	2038	2242	632	6
22026	"	13.49	14.37	5.86	5.81	23.1	2801	8002	4103	728	168	4095	5363	1318	26
22027	"	14.38	15.06	4.90	4.82	18.5	1643	4721	2313	428	79	2587	2944	754	12
22028	"	15.08	15.58	4.41	4.34	15.3	2974	8001	3803	774	118	4633	5236	209	25
22029	"	15.58	16.54	3.71	3.63	13.1	3790	8002	3540	856	112	4918	5322	1584	17
22030	"	16.54	17.55	3.11	3.04	11.9	3533	8002	3333	919	109	5076	5203	1589	19
22031	"	17.54	18.02	2.60	2.55	11.3	434	964	400	113	13	617	616	203	5
22032	"	18.52	19.48	5.91	5.87	20.3	2721	8002	4036	708	144	4229	5280	1346	21
22033	"	19.44	19.33	4.86	4.68	19.5	503	1442	716	131	26	752	981	246	4
22034	"	19.54	20.47	4.68	4.50	20.0	3117	8002	3689	811	162	4595	5279	1478	26
22035	"	20.46	21.42	3.90	3.74	14.8	3259	8001	3542	848	125	4792	5254	1492	26
22036	"	21.42	22.03	3.26	3.12	12.3	1161	2815	1141	302	37	1755	1802	531	6
22037	"	22.35	22.42	6.08	6.04	29.9	391	1156	584	102	30	516	809	167	4
22038	"	22.43	23.30	5.87	5.78	23.6	2731	8001	4025	710	168	4138	5437	1386	18
22039	"	23.30	00.19	4.91	4.66	17.2	2906	8002	3806	756	130	4439	5490	1457	32
22040	3.8.85	00.19	01.12	4.12	3.90	14.8	3162	8001	3518	823	122	4716	5340	1535	32
22041	"	00.12	01.56	3.45	3.27	13.2	2563	6194	2659	667	88	3785	3994	1195	12
22042	"	02.29	03.00	6.26	6.30	25.2	916	2791	1455	238	60	1437	1831	479	6
22043	"	03.48	04.27	6.27	6.09	21.7	2824	8002	3870	735	159	3811	5664	1047	22
22044	"	04.37	05.28	5.22	5.07	19.0	2905	8002	3768	756	144	4285	5374	1324	19
22045	"	05.28	06.21	4.36	4.24	14.5	3127	8002	3656	813	118	4635	5358	1478	24

Processors NSO	Processors MIP	on/off TOF	on/off FAMP	<L> 10^{30} cm^{-2} s^{-1}	Bhabha $\int L dt$ nb^{-1}	$\int L dt$ 9945Ga Exp. Energy	IBM/TAPE Output	At Run Start ID (μA)	At Run Start TOF (V)	On line Sum Mip rec T2 %	Rej N−SD T1&T2 %	Σ Bhabha	MH	E_{Beam}	Mag Field −1+6 amps	Remarks
ON	ON	ON	ON	3.14	7.77	9953.67	IBM	1.2	0.6	43	57	88	0	21.800	4840	
"	"	"	"	2.37	6.54	9960.21	"	1.0	0.55	48	57	74	1	"	4838	
"	"	"	"	1.71	5.04	9965.25	"	0.8	1.0	44	60	57	1	"	4838	beams dumped
"	"	"	"	3.27	8.52	9974.17	"	1.4	0.8	41	55	101	2	"	4838	
"	"	"	"	2.64	7.51	9981.68	"	1.2	0.7	45	58	85	1	"	4838	
"	"	"	"	1.94	5.39	9987.07	"	0.9	0.55	48	59	61	0	"	4838	
"	"	"	"	1.43	5.57	9992.64	"	0.7	0.55	50	61	63	1	"	4838	
"	"	"	"	1.31	0.44	9993.08	"	?	?	52	62	5	0	"	4839	beams dumped
"	"	"	"	0.36	0.0	9993.08	"	1.6	1.0	−1	58	0	0	"	"	beams lost
"	"	"	"	3.76	8.75	10001.13	"	1.0	1.3	40	53	99	1	"	4838	Stop run "no events"
"	"	"	"	3.01	7.95	10009.08	"	0.8	1.2	43	54	90	2	"	4840	
"	"	"	"	2.48	5.92	10015.00	"	0.8	1.3	46	56	67	4	"	4841	
"	"	"	"	1.76	5.04	10020.04	"	0.7	0.5	48	59	57	ϕ	"	4841	
"	"	"	"	1.49	1.86	10021.90	"	0.6	0.4	51	61	21	ϕ	"	4842	Beams dumped
"	"	"	"	4.15	11.49	10033.39	"	1.0	1.4	40	52	130	4	"	4841	
"	"	"	"	3.12	5.65	10039.04	"	1.1	0.75	41	54	64	0	"	4841	Run stopped due to "no events" msg
"	"	"	"	2.60	7.51	10046.55	"	1.1	0.7	45	55	85	6	"	4843	
"	"	"	"	1.90	4.95	10051.50	"	0.9	0.6	50	58	56	1	"	4844	
"	"	"	"	1.28	3.98	10055.48	"	0.7	0.4	51	61	45	2	"	4842	
"	"	"	"	1.13	0.44	10055.92	"	0.6	0.35	52	61	5	0	"	4842	~~Beams dumped~~, Beams dumped.
"	"	"	OFF	4.62	11.35	10067.67	"	1.4	1.1	41	52	133	3	21802	4841	
"	"	"	ON	3.62	1.68	10069.35	"	1.2	0.85	43	53	19	0	"	4841	Stop run "no events"
"	"	"	"	2.68	9.10	10078.40	"	1.2	0.8	45	56	103	3	"	4841	
"	"	"	"	2.07	5.65	10084.05	"	1.0	0.6	48	58	64	4	"	4841	
"	"	"	"	1.71	1.33	10085.38	"	0.8	0.5	49	62	15	0	"	4841	Beams dumped
"	"	"	"	4.99	1.50	10086.80	"	1.5	1.2	36	53	17	1	"	4841	Stop run "no events"
"	"	"	"	4.15	9.54	10096.34	"	1.4	1.2	41	52	108	4	"	4841	
"	"	"	"	3.20	6.95	10102.79	"	1.025	0.9	45	55	73	2	"	4840	
"	"	"	"	2.25	6.18	10108.97	"	1.05	0.7	47	58	70	2	21800	4840	
"	"	"	"	1.65	4.15	10113.12	"	0.85	0.55	49	60	47	0	"	4840	BEAMS DUMPED.
"	"	"	"	4.78	4.95	10118.07	"	1.5	1.25	39	51	56	3	21802	4839	BEAMS LOST
"	"	"	"	4.30	8.57	10126.64	"	1.5	1.1	38	54	97	2	"	4839	
"	"	"	"	2.90	6.54	10133.18	"	1.25	0.75	42	56	74	4	"	4841	
"	"	"	"	2.20	5.30	10138.48	"	1.1	0.65	47	57	60	1	21800	4840	

continued

Run	Date	Start	Stop	At Run Start I^+	At Run Start I^-	Dead Time (%)	Time (sec)	Records In	Records Out	All *10⁶	TØ Res *10⁶	T_1 Acc Sum	T_2 Acc Sum	T_1 Bit 2 $E_{LC} > 6$GeV	T_2 Bit 9 $2T.E_{el} \geq 2T_{tr}$
22046	3.8.85	06 21	07 08	3.67	3.57	13.0	2736	6553	2792	712	92	3927	4362	1194	27
22047	"	09 10	09 59	5.90	5.83	21.6	2816	8002	3480	732	158	3951	5530	1189	26
22048	"	09 58	10:50	4.95	4.89	17.8	3037	8002	3723	790	140	4332	5448	1392	19
22049	"	10 50	11:44	415	4.11	13,6	3223	8002	3475	838	114	4665	5342	1424	13
22050	"	11:44	12:33	3.48	3.46	12.4	2846	6646	2832	740	92	4093	4406	1299	16
22051	"	13:16	14:04	6.03	5.97	22.6	2775	8002	4442	721	163	4043	5370	1279	28
22052	"	14:11	15:01	4.92	4.87	16.8	2921	8002	3916	760	127	4521	5352	1448	20
22053	"	15:00	15:54	4.13	4.08	14.4	3128	8001	3669	814	116	4765	5259	1538	20
22054	"	16:54	16:47	3.46	3.38	13.0	3149	7426	3233	820	107	4635	4854	1435	10
22055	"	19:12	20:02	5.56	5.56	19.1	2964	8001	4013	771	147	4236	5406	1263	30
22056	"	20.02	20.37	4.62	4.68	1750	2020	5303	2494	526	92	2986	3567	897	15
22057	"	21:54	22:41	6.01	5.94	20.6	2794	8002	4064	727	150	4159	5431	1279	24
22058	"	22:41	23:31	5.01	4.86	16.2	2992	8001	3829	779	126	4460	5479	1371	25
22059	"	23:32	23:45	4.19	4.05	13.7	798	2007	951	208	28	1171	1327	350	4
22060	"	23.46	00 46	398	384	18.0	3542	8001	3484	922	166	4798	5457	1454	25
22061	4/8/85	01 15	02 03	5.83	5.94	19.5	2815	8002	4004	732	143	4355	5474	1298	20
22062	"	02 03	02 53	4.86	4.93	16.7	2904	8002	3801	755	126	4536	5288	1351	20
22063	"	02 53	03:46	4.07	4.13	14.1	3764	8001	3693	707	116	4744	5308	1433	25
22064	"	03:48	04:02	3.40 4.08	3.46 4.14	13.3	842	2018	905	219	29	1230	1315	354	2
22065	"	04:33	05:21	6.12	5.40	20.6	2825	8001	4124	735	152	4226	5453	1226	27
22066	"	05:22	06:11	5.11	4.45	16.8	2942	"	3898	765	128	4396	5506	1394	27
22067	"	06:12	06:50	4.30	3.72	15.1	2249	5625	2658	585	88	3232	3894	919	17
22068	"	06:57	07:04	3.78	3.26	16.0	728	1808	828	190	30	1097	1178	289	1
22069	"	—	—	—	—	—	—	—	—	—	—	—	—	—	—
22070	"	07:12	07:24	3.54	3.05	12.3	726	1697	771	189	23	1005	1130	270	4
22071	"	07:55	8:43	6.15	6.07	26.2	2834	8002	4264	737	193	3977	5576	1158	37
22072	"	8:43	9:34	5.12	5.04	20.4	2870	8002	4042	747	153	4238	5553	1260	37
22073	"	9:34	10.26	4.26	4.17	15.5	3069	8002	3780	798	123	4613	5490	1355	24
22074	"	10:26	11:12	3,58	3.51	13.3	2712	6560	2971	706	94	3911	4471	7091	19
22075	"	11:13	11:26	3.08	3.03	16.9	758	1738	752	197	33	1035	1157	244	8
22076	"	12:03	12 27	3.96	5.70	21.8	1354	3987	2043	352	77	2014			
22077	"	13 21	14:09	6.19	6.02	22.8	2861	8001	4308	744	170	3967	5533	7752	27
22078	"	14:09	14:58	5.13	4.96	18.5	2893	8002	4048	752	138	4259	5609	1259	24
22079	"	14:58	15:53	4,29	4,14	15.1	3198	8002	3779	832	126	4677	5458	7293	26

Processors ON/OF NSO	MIP	TOF	RAMP	⟨L⟩ 10^{30}cm^{-2}s^{-1}	Bhabha $\int$Ldt nb^{-1}	$\int$Ldt Exp. Energy	IBM TAPE Output	At Run Start ID (MA)	At Run Start TOF (V)	Online Rej Sum Microbc T_2 %	Online Rej Mixed-50 T_1&T_2 %	$\sum$ Bhabha	MH	E_{BEAM}	Mag. Field ·1X GAUSS	REMARKS.
ON	ON	ON	ON	1.70	5.12	10143.60	IBM	0.9	0.5	48	60	58	0	21.802	4840	beams dumped
"	"	"	"	3.45	8.66	10152.26	"	1.5	1.3	46	53	150	3	21.800	4840	
"	"	"	"	2.81	5.83	10158.09	"	1.3	0.8	42	56	105	2	21.800	4837	
"	"	"	"	2.05	5.92	10164.01	"	1.1	0.6	46	59	93	0	21,800	4838	beams dumped
"	"	"	"	1.50	4.15	10169,16	"	0.9	0.5	49	60	68	0	21.802	4838	beams dumped
"	"	"	"	3.94	11.93	10181.09	"	1.8	1.3	40	51	185	0	21800	4838	
"	"	"	"	3.35	8.13	10189.22	"	1.2	0.8	45	54	128	2	21.800	4838	
"	"	"	"	2,30	7,25	10196.47	"	1.0	0.7	48	56	122	0	21.802	4840	
"	"	"	"	1.66	6.18	10202.65	"	0.8	0.5	51	59	70	2	21.800	4840	beams dumped
"	"	"	"	3.93	11.04	10213.69	"	0.80	1,25	43	53	125	1	21800	4838	
"	"	"	"	2.89	5.48	10219,17	"	1.1	0.7	45	56	62	0	21.800	4839	beams lost
"	"	"	"	4.45	11.49	10230.66	"	1.4	0.9	41	52	130	3	21802	4837	
"	"	"	"	3.20	9.01	10239.67	"	1.2	0.75	45	55	102	1	21800	4837	
"	"	"	"	2.70	1.86	10241.53	"	1.0	0.6	48	55	21	0	21800	4838	Run stopped cfk "MC crash"
"	"	"	"	2.01	5.48	10247.01	"	1.0	0.5	49	59	62	1	—"—	4837	BEAMS DUMPED
"	"	"	"	4.51	12.63	10259.64	"	1.4	0.9	43	52	143	3	—"—	4841	
"	"	"	"	3.05	8.30	10267.94	"	1.2	0.75	45	55	94	3	—"—	4840	
"	"	"	"	2.37	7.42	10275.36	"	1.0	0.6	48	57	84	0	—"—	4841	
"	"	"	"	1.69	1.50	10276.86	"	0.9	0.5	50	58	17	1	"	"	beams dumped
"	"	"	"	4.17	11.66	10288.52	"	1.4	0.4	42	57	132	4	"	"	
"	"	"	"	2.74	8.48	10297.00	"	1.2	0.8	45	54	96	5	"	4842	
"	"	"	"	2,05	4.57	10301.57	"	0.9	0.7	48	56	57	1	"	4843	Trigger hang up
"	"	"	"	1.73	1.33	10302.84	"	0.8	0.55	49	57	15	0	"	4842	Linac Problem, PWR keeps fill
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	This run does not exist
"	"	"	"	1,55	1.68	10304.52	"	0.7	0.54	47	57	79	0	21802	4843	beams dumped
"	"	"	"	4,12	11.40	10315.92	"	1.5	1.2	41	49	129	3	21800	4840	
"	"	"	"	2.97	8.22	10324.14	"	1.25	1.0	43	52	93	4	21800	4841	
"	"	"	"	2,19	5,83	10329.97	"	1.05 ~~1.10~~	0.78	47	55	66	0	21.802	4844	
"	"	"	"	1.62	4.68	10334.65	"	0,9	0,68	49	57	53	1	21802	4844	stopped because of hangup
"	"	"	"	1.16	0.88	10335.53	"	0.85	0,52	47	59	10	1	21800	4845	Beams dumped
"	"	"	"	4.26	5.92	10341.45	"	1.4	1.3	42	57	67	2	21.802	4844	Partly without UTX C / Beam Cut
"	"	"	"	4.27	11.66	10353.11	"	1.45	1,1	39	49	132	3	21800	4847	Run ending normally
"	"	"	"	3,02	8,31	10361,42	"	1.20	0.9	44	52	94	2	21.802	4847	"
"	"	"	"	2.23	8.17	10369,59	"	1.0	0.7	48	55	92	2	21800	4846	"

08.00 Glasser and Bowdery on shift

08:30 Injection restarts following a short break.
10:15 many IBM jams reported
15:00 runs 22051 & 22052 have unusually high reported luminosities. Have we installed µB over the last week ?
~~15:55~~ Bhabha rates are also high. Ran Stand Hiistc but saw nothing
15:52 IBM busy rate is high

16:00 Clarke, Kleinwort on shift
16:30 Gas check done
23:45 No triggers Pause/Continue didn't help, Run stopped new started → O.K.

4/8/85 0:00 Hedgecock + Kado on shift

Gas check done, ok.
1:20 VTXC soft trips (Q1) three times. bias current in Q1 now ~ 25-30 µA. Softtrip threshold increased to 95 nA for this Quadrant. (FK)
2:00 5 FADC Moduls adjusted to proper pedestal values
3:46 when Run 22063 stopped, no run summary came out, but display says "Run summary printing" (Gould plotter on-line!). After starting a new run, display says "inting"
Try to get the Run summary (on the Tektronix screen) resulted in "YRUNSM: SAVED SUMMARY FILE (D-F)RUNSM-27: SYMB ERROR 28". US-STAT DA-FI and FI-STAT (DA-FI) R-27:S showed nothing unusual. After retry it worked and Run-summary seems to be ok ! ??
6:49 "NO TRIGGERS..." Pause/Continue does not help. Start new run
7:03 After run down the HV for a new fill, suddenly "Switch ON the high Valtge" showed up on PETRA TV → PKR has Linac problems. They will keep the beams for at least ½ hour
~~7:08~~ ups... too fast — I started a run with HV still down, so RUN # 22064 does not exist

8:00 Krehbiel + Chinn on Shift.
9:25 JETC and VTXC Soft Trip
12:05 After refill: VTXC hard trip. Attempts to reset it lead to more trips ~~with~~ with meter on top of colour TV going out of range. Called the expert on duty. When he was on the phone, the VTXC behaved well again.
12.25 Beams lost. Something terrible. ~~Magnet~~ Energy 0 on TV. Probably a PETRA magnet failur

13 20 Beams up again. This time conditions slightly better Tof-Rate 1.7 V. Beam-Life times above 4 h.
14 20 Part of Deadtime caused by IBM Jams, Asked Taro whether they have the same problems. They don't take data. They have computer problems.
15:55 Missing LAM Br 4 Cr. 7

16 Gaursharma and Drieden — on shift.
16 20 Gas check done.
17 40 frequent VTXC Trips. Q1

5/8/85 0:00 Clarke v. Ramcke on shift

0:17 Gas check ok.
04.00 VTXC tripped twice, z-ch trip.

8 00 Bowdery Elsen on shift
8 17 ID-soft trip
8:30 Energy alleted. (Klystron tripped?)
BP chamber soft trip
z chamber hard trip
8:34 Energy now correct again.
8:40 "No triggers". Had to stop run to cure it this time.
8:55 Reform-Jobs submitted. Gas check done.
8:57 "No triggers". Again, the run had to be stopped to cure the problem.
9.21 " " " " " " " " " " " " "
13:00 Injection problems.
14:00 " "

16:00 McCormidale & Wormiey on shift
gas check done, ok
fan unit exchanged in one of the LG-ADC-crates because the old one made horrible noise.
19:25 new fill ready, high background,
19:30 2x 10X error adr. 6746 Level 10
19.45 8X JOAS READOUT ERROR 33 - Missing LAM branch 2 crate 3 : TOF1 COUNTERS.
20.44 beams lost
21.47 beams dumped, one of the correction coils of PETRA went crazy.
K-people have to fix the problem

RUN	DATE	START	STOP	AT RUN START I+	AT RUN START I-	DEAD TIME (%)	TIME (sec)	Records IN	Records OUT	ALL *10^6	TY Rej. *10^6	T1 ACC SUM	T2 ACC SUM	T1 Bit2 E>6.76GeV	T2 Bit17 2T. E>2.72GeV	Remarks
22080	4.8.85	15:52	16:36	3.58	3.46	13.4	2539	6067	2671	660	88	3689	4056	1014	1.0	Beam dumped
22081	"	17:06	17:54	6.20	6.01	21.8	2798	8002	4017	728	159	4161	5802	1211	26	
22082	"	17:56	18:49	5.12	4.55	16.4	2916	8001	3811	759	124	4439	5581	1245	36	
22083	"	18:49	19:43	4.26	3.77	14.2	3192	8002	3690	830	118	4738	5481	1288	25	
22084	"	19:44	20:07	3.57	3.15	13.5	1362	3337	1455	354	48	2029	2235	546	14	
22085	"	20:41	21:28	6.40	6.21	24.9	2812	8002	4182	732	182	4091	5518	1180	23	
22086	"	21:29	22:19	5.28	5.03	17.3	2943	8002	3909	766	133	4330	5576	1256	27	
22087	"	22:19	23:13	4.45	4.23	14.1	3188	8001	3521	829	117	4512	5564	1293	27	
22088	"	23:13	23:56	3.77	3.59	13.6	2528	6186	2713	658	89	3574	4321	919	22	
22089	5.8.85	3.30	4.24	5.89	5.94	19.0	3060	8002	3974	795	151	3883	5874	996	25	
22090	"	4.24	5:20	4.93	4.99	18.1	3297	8001	3742	857	155	4172	5881	1148	22	
22091	"	5:21	6:21	4.15	4.21	16.1	3224	8001	3629	703	134	4373	5719	1269	20	
22092	"	6:21	7:11	3.48	3.55	18.5	3021	8001	4039	786	145	4300	5832	1234	31	
22093	"	7:12	7:32	3:01	3:08	24.9	871	2527	1265	227	57	1287	1867	404	12	
22094	"	8:07	8:41	5.77	6.08	25.1	1652	4623	2259	430	108	2114	3374	631	15	
22095	"	8.42	8:57	5.12	5.37	21.9	880	2477	1257	229	50	1230	1747	397	8	
22096	"	8:58 4:54	9:21 5:07	4.84	5.07	17.6	1322	3611	1693	344	60	1938	2451	554	11	
22097	"	9:22	10:14	4.45	4.68	14.6	3077	8001	3718	801	116	4566	5493	1298	23	
22098	"	10:14	11:09	3.71	2.91	13.9	3271	8001	3694	852	118	4753	5451	1302	24	
22099	"	11:09	11:22	5.19	3.27	12.5	731	1826	811	191	24	1138	1150	327	4	
22100	"	15:12	16:00	6.09	6.24	21.8	2823	8002	4183	735	160	3948	5622	1129	32	
22101	"	16:00	16:12	4.84	4.97	19.9	776	2220	1170	202	40	1188	1440	382	7	
22102	"	17:11	18:08	3.77	3.82	13.1	3390	8002	3680	883	116	4615	5701	1330	20	
22103	"	18:09	18:49	2.99	3.03	12.3	2353	5499	2417	613	75	3356	3694	997	14	
22104	"	19:27	20:15	5.85	5.70	25.5	2835	8001	4136	738	188	4171	5423	1300	31	
22105	junk															
22106	"	20:20	20:42	4.47	4.34	17.0	1449	3981	1963	397	64	2247	2665	707	8	
22107	"	21:30	21:42	6.11	6.01	39.0	645	1880	1079	168	65	813	1357	243	5	
22108	~~20.0~~ "	22:40	22:47	6.05	5.96	37.2	375	1113	634	61	36	485	778	139	5	
22109	6.8.	23.21	0.08	6.14	6.10	21.5	2835	8001	4179	737	158	4055	5634	1249	28	
22110	"	0:08	0:58	5,10	4,81	17,1	2948	8002	3801	767	131	4307	5581	1318	26	
22111	"	0:58	1:53	4.26	4.09	13,9	3246	8002	3677	844	118	4723	5522	1450	17	
22112	"	1,53	2:35	3.55	3.40	13.3	2488	5787	2532	650	86	3507	3947	1060	18	
22113	6.8.	3.01	3.47	6.22	5.97	23.5	2735	8002	4112	710	166	4083	5541	1270	21	
22114	"	3.47	4:20	5,18	4.86	17,7	1804	4353	2638	485	88	2819	3599	900	20	

Processors ON/OFF NSO	NIP	TOF	FAMP	∠L7	Bhabha ∫Ldt 10^{30} cm^{-2}s^{-1}	∫Ldt nb^{-1}	EXP. ENERGY	TRIG/TIME OUTPUT	At Run Start FD (MH)	At Run Start TOF (s)	ONLINE REJ SUM NIPROC T_2%	ONLINE REJ NOKO-SO T_1+T_2%	Σ Bhabha	MH	E_{beam}	Mag. Field -1+ Gauss	Remarks
ON	ON	ON	ON	1.66	4.51	10374.10		IBM	0.83	0.56	50	59	51	2	21.802	4.843	Beam dumped
"	"	"	"	4.19	10.60	10384.70		"	1.5	1.5	43	52	120	4	"	4844	
"	"	"	"	2.96	8.22	10392.92		"	1.1	0.8	45	55	93	0	"	4844	
"	"	"	"	2.04	4.77	10397.69		"	0.9	0.7	49	57	54	2	"	4842	
"	"	"	"	1.63	1.94	10399.63		"	0.7	0.5	50	59	22	0	"	4843	Beam dumped
"	"	"	"	4.23	11.49	10411.12		"	1.3	1.2	42	50	130	3	"	4842	
"	"	"	"	2.51	6.71	10417.83		"	1.2	1.0	45	54	76	3	"	4842	
"	"	"	"	1.36	4.33	10422.16		"	1.0	0.6	46	59	49	0	"	4843	
"	"	"	"	1.00	2.74	10424.90		"	0.8	0.6	49	59	31	0	21.800	4843	Beam dumped
"	"	"	"	2.5	7.33	10432.23		"	0.7	1.2	42	53	83	2	21.802	4840	
"	"	"	"	1.68	5.39	10437.62		"	0.6	0.75	45	56	61	2	21.800	4841	
"	"	"	"	1.16	3.80	10441.42		"	0.5	0.7	47	57	43	1	21.800	4841	
"	"	"	"	0.80	2.03	10443.45		"	0.8	1.0	49	52	23	2	21.800	4840	
"	"	"	"	0.68	0.44	10443.89		"	0.8	1.7	50	53	5	0	21.800	4841	Beams dumped
"	"	"	"	2.49	4.59	10448.48		"	1.4	1.2	39	54	62	0	21.800	4841	NO TRIGGERS problem: run dumped
"	"	"	"	2.29	1.86	10450.34		"	1.2	1.1	43	52	21	3	21.800	4841	" " " " "
"	"	"	"	2.17	2.87	10453.21		"	1.2	0.75	43	56	38	0	21.800	4840	" " " " "
"	"	"	"	2.44	7.60	10460.81		"	1.0	0.70	47	56	82	1	21.800	4841	
"	"	"	"	1.92	5.92	10466.73		"	0.8	0.65	49	56	67	0	21.802	4840	
"	"	"	"	1.50	0.62	10467.35		"	0.7	0.50	49	58	7	1	21.802	4841	Beams dumped
"	"	"	"	4.50	10.60	10477.95		"	1.5	1.02	40	51	120	5	21.802	4844	
"	"	"	"	3.72	2.74	10480.69		"	1.2	0.95	42	50	31	1	"	4845	Beams lost
"	"	"	"	1.87	6.54	10487.23		"	0.9	0.75	50	57	74	4	"	4844	
"	"	"	"	1.19	3.92	10490.15		"	0.7	0.55	50	59	33	0	21.800	"	Beams dumped.
"	"	"	"	3.60	9.45	10499.60		"	1.5	2.0	43	51	107	5	"	"	
									1.0	0.8							
"	"	"	"	3.01	4.68	10504.28		"	1.0	0.8	46	54	53	2	21.802	"	Beams lost.
"	"	"	"	4.06	1.94	10506.22		"	1.5	1.7	39	45	22	0	"	4843	Beams Run.
"	"	"	"	4.42	1.94	10508.16		"	1.5	1.5	29	46	22	0	"	4844	Beams Run.
"	"	"	"	4.35	11.48	10519.64		"	1.5	1.2	42	50	130	1	21.80	4844	
"	"	"	"	3.17	8.38	10528.03		"	1.2	0.8	44	54	85	1	21.800	4843	
"	"	"	"	2.21	7.60	10535.63		"	1.0	0.6	49	57	86	4	21802	4842	
"	"	"	"	1.76	3.53	10538.19		"	0.8	0.5	51	59	40	2	21800	4841	beams dumped
"	"	"	"	4.07	11.22	10550.41		"	1.5	1.1	42	57	127	9	21802	4841	
"	"	"	"	3.20	4.85	10555.36		"	1.2	0.8	44	54	56	1	21800	4841	

6.8 Narodka + Schmidt

0:00 Gas check done
3.00 New filling. VTXC current ~ 50 on meter for the first 10 min
Then back to old value 66. Inquiry at PKR revealed nothing.
Miss. Lam bor. 6 cr. 4
MP 16 incomplete analysis
" analysis out of sequence
4.30 Partial beam loss after transmitter failure.
Tasso decides to refill.

8:00 Chrin and Wado on shift

8.15 gas check done

11:40 Unable To view old histograms. Error message printed on system console:-
YHDISP. Open/Kpb error 124 reading NSOhist.pk
looking Through the system console output, I see That this first occurred during the night at 00:08 hrs. Unable To inform Howard Mills until ~ 10 p.m.!

12:40 all chambers tripped, then beams lost
13:30 Xspy error: Trigger 2 Trackset Missing; Also dead Class HV Error
Kawagoe called
HV Barrel 9 & EC were down due to overcurrent.
switch OFF/ON → they seem working. OK.
In such a case, please try power ~~ON~~ OFF/ON!

14:05 all chambers tripped → partial beamloss, then beams dumped
15:33 Run Summary Sheet 22126 gives records out as 0!!?? (Records in was 8002).
probably this is related with the histogram problem (see 11:40 above) – may be a bad File.
Jan Olsson will come.
The saved run summary 22126 is OK!

16:00 Lavrikainen and Hellenbrand on shift
Gas check. ✓

00.00
Glossen & Clarke

00.10 Gas check done
00.35 Beams on, very high background, cannot switch on. (01.00)
01:00 Beampipe chamber trip - Gas active
01:15 Vtxc Valve failure, reset OK.
03:00 Gould plotter advance is not working right
04:10 Tof rate are high, despite "optimisation"
04:55 Gould fails every time now
05:00 Gould is DEAD

8:00 Bartel & Smolik
8:15 gas check done O_2 - Monitor still on #1 cannot get it work for # 8 call Buch + B2
10:45 gas monitor (O_2) ok

N50 - pgm is NOT sink: Don't look for old histograms
or X-sections
that will cause a N50 hang up. You have to
start up again with 'EXIT'
This last attempt to look at histograms managed to switch all processors off. On again from R 22148
In addition: FAMP is noted as "off" in HEAD bank for R 22146-147, although on and active. (This is a bug!)
15:45 2-chamber trip

16:00 Bowdery + Pawlick on shift
16:20 gas check OK
20:07 Beam lost - all chamber tripped Short break. Used this to rebuild system and copy disc to backup.
Note! the problem with old-histograms will remain until somebody manages to notify Howard Mills.
Night-shift should try call him between 00 and 01, or 06-08!
21:00 Record currents 6.83 / 6.67 at Rstart. LC distr. 9 overcurrent again, OFF/ON Helped
21:40 Muon crates 3 and 5 needed to be powered off and on to cure a frequent, intermittent 'missing crate'.
21:48 Run 22157 stopped 1346 Muon-bankstructure error!?

RUN	DATE	START	STOP	AT RUN START I^+	AT RUN START I^-	DEAD TIME (%)	TIME (sec)	RECORDS IN	RECORDS OUT	ALL $*10^6$	T∅ REJ $*10^6$	T_1 ACC SUM	T_2 ACC SUM	T_1 BIT 2 $E_{cl} > 76$ GeV	T_2 BIT 17 $2T \cdot E_{cl} \geq 2T_2$
22115	6.8.85	4:28	4:32	3.81	2.55	13.9	238	581	278	62	9	319	381	103	2
22116	"	5.08	5.58	6.13	6.26	25.7	2967	8002	4090	771	198	3.984	5779	1196	24
22117	"	5.58	6.48	5.05	5.09	18.9	2951	8002	3871	766	145	4421	5497	1364	27
22118	"	6:48	7.41	4.20	4.24	14.1	3182	8001	3720	830	117	4549	5510	1449	32
22119	"	7:42	8:23	3.49	3.53	13.0	1837	4420	1940	478	62	2653	3017	814	2
22120	"	8:44	9:36	6.17	6.29	25.2	2790	8002	4215	726	183	3968	5555	1258	24
22121	"	9:37	10:25	5.00	5.00	20.3	2911	"	3987	758	154	4307	5666	1383	22
22122	"	10:26	11:18	4:12	4:16	15.6	3117	8002	3794	811	126	4648	5509	1454	25
22123	"	11:18	12:02	3:40	3:47	16.2	2580	5927	2579	671	108	3618	3961	1104	15
22124	"	12:41	12:42	6.65	6.48	32.6	36	160	82	10	3	62	80	16	0
22125	"	13:28	14:07	6.85	6.80	26.3	2332	6575	3332	607	160	2707	5060	570	82
22126	"	14.48	15:35	6.50	6.48	28.4	2780	8002	4179 6877	723	205	3876	5701	1096	19
22127	"	15:37	16:27	5.07	5.17	17.5	2929	8001	3963	762	134	4268	5570	1248	23
22128	"	16:27	17:19	4.09	4.20	15.4	3107	7558	3504	808	124	4432	5144	1236	21
22129	"	17.48	18.35	6.61	6.52	29.0	2745	8001	4208	714	206	3818	5632	1172	17
22130	"	18:35	19:12	5.34	5.38	18.4	2191	6287	3115	570	105	3354	4204	991	16
22131	6.8.85	20:59	21:47	6.57	6.53	22.9	2804	8002	4118	730	167	3758	5759	1066	21
22132	"	21:47	21:54	5.40	5.42	20.4	621	1744	870	162	33	878	1217	257	6
22133	7.8.85	1:14	2:10	5.41	5.41	23.2	3330	8002	3947	866	201	4045	5815	1044	23
22134	"	2:10	3:05	4.39	4.36	13.6	3258	8002	3610	847	115	4337	5645	1120	17
22135	"	3:05	3:06	3.57	3.61	12.3	1521	3421	1455	395	48	1956	2394	507	10
22136	"	4:03	4:52	5.75	6.11	20.1	2900	8002	4012	754	151	3947	5801	1078	28
22137	"	4:52	5:45	4.15	4.98	16.2	3098	8002	3746	806	130	4336	5646	1163	27
22138	"	5:45	6:23	3.68	4.11	13.0	2223	8002	2328	578	75	3050	3739	842	15
22139	"	6.55	7.47	6.08	5.86	23.4	2879	8001	4238	748	175	3890	5610	1067	24
22140	"	7.46	8.40	4.87	4.79	16.4	3159	8002	3778	822	134	4478	5538	1274	22
22141	"	8.40	9:37	3.99	3.93	12.7	3405	8002	3658	887	113	4684	5486	1278	22
22142	—"—	9.41	9:57	3.24	3.21	11.5	944	2070	882	246	28	2651	1433	326	3
22143	"	10.32	11:21	6.14	6.13	24.1	2843	8002	4228	741	179	3953	5572	1162	36
22144		11:22	12.09	4.97	5.01	16.8	2741	7542	3652	714	120	4053	5172	1192	15
22145		~~12:16~~		does not exist											
22146		12:16		4.03	4.09	18.1	2580	8002	2969	672	122	3524	4071	1067	18
22147		13:00		3.43	3.49	15.1	1484	4461	1529	387	58	1948	2275	534	3
22148		13.27	13.28												

PROCESSORS ON/OFF NSO	MIP	TOF	FAMP	$\mathcal{L}L7$ $10^{30} cm^{-2} s^{-1}$	Bhabha SLdt mb^{-1}	SLdt EXP. ENERGY	IBM TAPE OUTPUT	AT RUN START TD (mA)	AT RUN START TOF (V)	ON LINE REJ SUM MIDEC T_1 %	ON LINE REJ NORDSO $T_1 \cdot T_2$ %	$\sum$ Bhabha	MH	E_{BEAM}	MAG. FIELD $-*6$ amp	REMARKS
ON	ON	ON	ON	1.34	0.35	10555.61	IBM	0.8	0.5	48	57	4	0	21800	4841	beams dumped
"	"	"	"	3.74	9.19	10564.80	"	1.5	1.2	42	52	104	1	"	"	
"	"	"	"	3.15	9.19	10573.99	"	1.2	0.9	45	54	104	3	"	"	
"	"	"	"	2.20	7.16	10581.15	"	1.0	0.7	47	56	81	4	"	4840	
"	"	"	"	1.72	3.89	10585.04	"	0.8	0.6	50	59	44	7	21802	4841	beams dumped
"	"	"	"	4.04	11.49	10596.53	"	1.6	1.2	41	50	130	4	"	"	
"	"	"	"	2.93	8.22	10604.75	"	1.4	2.0	46	53	93	0	21800	"	
"	"	"	"	2.19	8.84	10613.59	"	1.0	0.7	48	55	100	6	21802	4842	
"	"	"	"	1.78	3.45	10617.04	"	0.8	0.75	49	59	39	4	21802	4844	beams dumped.
"	"	"	"	5.54	0.27	10617.31	"	1.6	1.2	14	56	3	0	21800	"	beams lost
"	"	"	"	5.78	6.27	10623.58	"	1.8	1.8	39	52	71	3	"	"	beams lost
"	"	"	"	4.37	10.78	10634.36	"	1.6	1.6	41	50	122	7	"	"	
"	"	"	"	3.19	9.34	10643.70	"	1.2	0.8	44	53	118	4	"	4844	
"	"	"	"	2.17	5.65	10649.35	"			48	56	64	3	"	"	beams dumped
"	"	"	"	4.24	11.31	10660.66	"	1.8	1.87	40	50	128	2	21802	"	
"	"	"	"	3.44	7.55	10668.21	"	1.3	0.8	42	53	78	0	21.800	4844	beams lost
ON	ON	ON	ON	4.50	12.37	10679.58	IBM	1.7	1.2	40	57	140	1	21.802	4840	
"	"	"	"	3.77	1.41	10680.99	"	1.3	0.8	42	53	16	2	21.802	4841	beams lost
on	on	on	on	3.37	10.87	10691.86	IBM	0.7	0.75	42	53	173	5	21.800	4836	very dirty beam
"	"	"	"	2.55	7.16	10699.02	"	1.1	0.6	45	58	126	3	21.900	4836	
"	"	"	"	1.35	1.86	10700.88	"	0.9	0.5	48	60	34	1	21.802	4837	
"	"	"	"	3.87	10.69	10711.57	"	1.5	1.6	42	52	169	2	21.900	4838	
"	"	"	"	2.60	7.42	10718.99	"	1.1	0.8	45	56	120	6	21.802	4838	
"	"	"	"	1.92	3.90	10722.89	"	0.9	0.6	47	59	61	0	21.800	4835	Beams dumped
"	"	"	"	3.93	10.60	10733.39	"	1.4	1.4	42	50	120	1	21.800	4838	
"	"	"	"	2.86	8.75	10742.14	"	1.1	0.8	46	55	99	3	21.802	4838	
"	"	"	"	2.07	6.27	10748.41	"	1.0	0.5	48	57	71	0	21.802	4841	
"	"	"	"	1.62	0.88	10749.29	"	0.6	0.4	49	60	10	0	21.800	4840	Beams dumped
"	"	"	"	4.37	11.57	10760.86	"	1.4	1.6	41	50	131	4	21.800	4840	
"	"	"	"	3.45	9.10	10769.96	—"—	1.2	0.7	43	54	103	1	21.802	4841	
								1.0	0.6							
"	OFF	OFF	"	2.29	6.01	10775.97	"	1.0	0.8	3	66	68	0	21.800	4841	
"	OFF	OFF	"	1.98	1.68	10777.65	"	0.8	0.4	2	68	19	0	21.800	4841	Beams dumped
ON	ON	ON	ON		0.18	10777.83	"					2	0	"	4843	" "

RUN	DATE	START	STOP	AT RUN START I^+	AT RUN START I^-	DEAD TIME (%)	TIME (sec)	RECORDS IN	RECORDS OUT	ALL $\#10^6$	TØ REJ $\#10^6$	T_1 ACC SUM	T_2 ACC SUM	T_1 Bit 2 $E_{LG}>6$ GeV	T_2 Bit 17 $2T.E_\gamma \geq 2TR$
22149	7.8.85	14:14	14:16	6.26	5.91										
22150	"	14:16	15:05	6.20	5.85	23.2	2784	8001	4199	725	168	3951	5452	1135	26
22151	"	15:05	15:59	5.02	4.79	16.7	3077	8002	3775	801	135	4424	5386	1280	22
22152	"	15:59	16:57	4.03	3.91	14.1	3417	8001	3567	890	125	4662	5557	1350	19
22153	"	16:57	17:11	3.22	3.14	12.1	774	1793	751	201	24	1030	1148	305	8
22154	"	17:48	18:36	6.30	6.82	25.5	2867	8002	4210	747	181	3859	5629	1153	27
22155	"	18:36	19:32	4.18	5.05	14.6	3317	8002	3741	864	126	4551	5437	1296	15
22156	"	19:32	20:07	3.26	4.03	13.3	2018	4732	2095	525	70	2800	3205	736	10
22157	"	21:10	21:48	6.86	6.93	25.1	1654	4697	2366	430	108	2095	3291	470	22
22158	"	21:48	22:37	5.91	6.00	18.4	2916	8002	3934	758	139	4116	5536	1106	24
22159	"	22:38	22:44	4.75	4.88	16.1	362	990	490	94	15	524	653	143	5
22160	"	22:45	23:38	4.60	4.73	14.6	3162	8001	3740	703	119	4448	5500	1222	25
22161	"	23:39	0:13	3.73	3.86	12.6	1955	4673	2107	509	64	2745	3024	768	11
22162	8.8.85	0:57	1:46	6.10	6.18	21.2	2912	8002	6071	757	160	3871	5551	1032	34
22163	"	1:47	2:29	4.93	5.03	16.1	2118	5651	2648	551	88	2960	3833	767	22
22164	"	2:31	3:12	4.11	4.24	13.1	2477	5894	2651	644	84	3390	4015	930	11
22165	"	4:01	4:54	6.25	5.50	16.5	2928	8002	3874	762	125	4072	5724	1049	26
22166	"	5:01	5:57	4.93	4.32	12.9	3303	8002	3635	858	170	4535	5676	1771	20
22167	"	5:57	6:25	4.02	3.50	12.2	1666	3881	1664	423	53	2246	2587	542	14
22168	"	6:52	7:39	6.43	6.27	22.9	2797	8002	3956	728	166	93834	5638	1030	26
22169	"	7:40	8:30	5.27	5.15	17.3	3008	8002	3823	792	135	4186	5487	1138	37
22170	"	8:31	9.19	4.32	4.23	13.4	2839	6998	3177	738	98	3928	4827	956	32
22171	"	11:28	12:14	5.64	5.75	16.9	3078	8002	3893	801	135	3848	5693	997	23
22172	"	12:20	1715	4.60	4.72	14.9	3308	8001	3683	861	128	4356	5490	1174	21
22173	"	13:17	13:38	3.74	3.85	12.3	1237	2872	1248	321	39	1659	1953	445	9
22174	"	13:38	14:01	3.46	3.58	11.2	1476	3853	1802	384	43	2333	2710	644	9
22175	"	15:16	15:24	6.39	6.45	27.9	446	1338	702	116	32	353	909	125	4
22176	"	15:29	15:55	6.03	6.38	28.8	1346	3816	2022	350	101	1751	2562	489	10
22177	"	16:44	17:31	6.07	5.86	30.6	2789	8001	4286	726	222	3560	5667	977	30
22178	"	17:32	18:20	5.38	5.20	19.7	2887	8001	3934	251	148	4085	5597	1163	20
22179	"	18:20	19:12	3.49	3.38	16.4	3120	8002	3829	812	133	4441	5337	1224	25
22180	"	19:15	19:52	3.51	3.40	12.9	2161	4965	2260	563	73	2884	3415	780	18
22181	"	20.20	21.06	6.35	6.55	21.2	2739	8002	4022	712	151	4155	5740	1181	18
22180	"	21.07	22.01	5.11	5.28	15.9	2862	8002	3676	745	119	4246	5805	1250	25
22182	"	22.02													

PROCESSORS ON/OFF NSO	MIP	TOF	FAHP	$\langle L \rangle$ $10^{30}\,cm^{-2}s^{-1}$	$\int L\,dt$ nb^{-1}	Bhabha $\int L\,dt$ EXP. ENERGY	IBM/TAPE OUTPUT	AT RUN START ID (μA)	AT RUN START TOF (V)	ONLINE REJ SUM H/PROC $T_\emptyset$ %	ONLINE REJ NORD 50 T_1&T_2 %	Σ_{Bhabha}	MH	E_{Beam}	Magn. Field -14 Gauss	Remarks
ON	ON	ON	ON	4.43	0.09	10777.92	"	1.2	0.8			1	0	21.802	4840	
"	"	"	"	4.40	12.10	10780.02	"	1.2	0.8	40	50	137	4	21.800	4842	
"	"	"	"	3.04	8.83	10798.85	"	1.1	0.6	44	55	100	1	21.800	4842	
"	"	"	"	1.91	6.72	10805.57	"	0.7	0.7	49	58	76	1	21.802	4840	
"	"	"	"	1.45	1.15	10806.72	"	0.7	0.6	49	61	17	1	21.800	4844	Beam dumped
"	"	"	"	3.77	9.28	10816.00	"	1.6	1.2	42	50	105	1	21.800	4844	
"	"	"	"	2.48	7.86	10824.86	"	1.0	0.5	46	56	89	4	21.800	4844	
"	"	"	"	1.4	2.74	10827.60	"	0.8	0.5	48	58	31	2	21.800	4844	Beam lost
"	"	"	"	5.12	5.92	10833.52	"	1.6	1.0	351	53	67	1	21.802	4.840	stopped, many mem bank errors
"	"	"	"	4.10	10.07	10843.59	"	1.4	0.8	41	53	114	1	21.800	4840	
"	"	"	"	3.15	1.50	10845.09	"	1.2	0.6	40	54	17	0	21.802	4838	No TRIGGERS forced run stop
"	"	"	"	2.74	8.57	10853.66	"	1.2	0.55	45	56	97	1	21.880	4837	
"	"	"	"	2.03	4.15	10857.81	"	0.9	0.5	46	58	47	2	"	4838	Beam dumped.
"	"	"	"	4.17	10.69	10868.50	"	1.6	0.8	38	52	121	7	"	4837	
"	"	"	"	3.11	5.21	10873.71	"	1.3	0.7	40	56	59	2	"	4839	no triggers ; stopped run
"	"	"	"	2.31	6.45	10880.16	"	1.0	0.5	46	58	73	3	"	4837	Beam dumped
"	"	"	"	4.03	10.95	10891.11	"	1.5	0.8	40	54	124	1	"	4838	≈ 60% VTC - Readout
"	"	"	"	2.54	8.30	10899.41	"	1.2	0.6	45	56	94	3	"	4839	
"	"	"	"	1.89	2.74	10902.15	"	1.0	0.45	46	60	31	1	21.802	4838	beams dumped
"	"	"	"	4.09	10.34	10912.49	"	1.7	0.9	37	53	117	3	21.800	"	VTC HV = +4.50V
"	"	"	"	3.08	8.57	10921.32	"	1.4	0.7	41	55	141	0	21.800	4839	
"	"	"	"	2.14	5.12	10926.44	"	1.2	0.6	46	57	58	1	21.802	4840	beams dumped
"	"	"	"	3.76	11.93	10938.37	"	1.2	0.7	39	54	182	2	21.800	4856	
"	"	"	"	2.49	6.54	11002.91	"	1.02	0.55	43	58	117	3	21.800	4856	
"	"	"	"	2.12	1.77	11004.68	"	1.0	0.45	47	59	22	0	21.800	4857	~~counter~~
"	"	"	"	1.96	2.74	11007.42	"	1.0	0.7	47	55	41	1	21.800	4857	no vertex ch. Beams dumped
"	"	"	"	4.88	1.57	11009.01	"	1.75	1.0	31	51	18	1	21.800	4850	run stopped by error
"	"	"	"	4.01	6.27	11015.28	"	1.6	0.9	34	50	71	3	21.800	4838	beams lost
"	"	"	"	4.21	11.49	11026.77	"	1.6	0.95	37	49	130	5	"	4838	
"	"	"	"	3.22	7.35	11034.02	"	1.45	0.8	41	54	82	1	"	4838	
"	"	"	"	2.44	7.78	11041.80	"	1.2	0.65	44	55	88	1	"	4837	
"	"	"	"	1.69	2.74	11043.54	"	0.9	0.45	47	57	31	3	"	4837	Beams dumped.
"	"	"	"	4.16	10.51	11054.05	"	1.8	1.3	40	52	119	3	"	4835	≈ 35% VTC - Readout
"	"	"	"	2.95	8.39	11062.44	"	1.2	0.7	41	56	95	10	"	4835	
							"	1.0	0.6						4834	

8.8.85 00:00 hrs Dieckmann & Chin on shift

04:40 Very frequent vertex chamber trips during run no. 22165 ; Quadrant #1 being the culprit.
7:10 Anode Voltage of VTXC → 1450V because of permanent trips
8:00 Eberhe & Glasser on shift
8.30 Gas check done
9.15 IBM Error 54 (IBM busy)
9.25 Petra at last for 1st data
Problems with one klystron and one magnet which is losing water
run magnet down (2000 A)
11.40 VTXC volt now 1475
11:28 petra restart
IBM hangups (solved by PAUSE-CONTINUE) seem to be increasing.
1:38 VTX ch out for data run ← HV Trip threshold increased for Q1 and Q2.
VTXC back in readout again. (HK)

16[55] Looking at the "OLD-HIST" problem.
a) I find no evidence that the N50 program is stuck as described on p141.
b) Listing the OLD-HIST runs (first record on file works fine).
c) I rebuilt YHDISP with extra debug printout before trying - IT ALL WORKS FINE.!! HIST

16[00] Weber and Kawagoe on shift
16[10] Gas check done.
19.35 Printer has to be repaired or cleaned: It seems to get stuck each time it is initiated.
20.25 VTX-Chamber trip at beginning of run 22181
20.28 " " " during " "
20.32 " " " " " " PKR will try to reduce background for us;
According to PKR, the other experiments have a higher luminosity as JADE; they do not know why.
20.36 VTX-Ch. Trip.
20.40 " " "
VTX-Chambers stays on for at most 1 min. before tripping again. PKR says, everything possible was done to improve our running conditions. They do not know what else they can do.
21.20 We call VTX-Expert (Hagemann); He tells us how to increase threshold Q_1 from 5 V to 7.5 V; This seems to have cured the trouble!

9/8-85 0[00] Bowdery, Olsson 0[20] Gas check done (under 10 minutes!)
2[24] JetC soft trip.
2[30] JADE has lower luminosity than the other experiments, $1.8/10^{30}$ as opposed to $3\text{-}10^{30}$ at TASSO. TASSO reluctant to ask for new fill. PKR shows meager interest in this problem.
4[30] Our deadtime at fill start is quite high, ~ 30%. To investigate whether this could be due to running of FAMP, 3 short runs were done, with FAMP ON, OFF, ON. Deadtimes were 28, 21, 24%. which means that FAMP could cause up to 5% of deadtime under heavy conditions.
4[50] The next runs after this investigation got hanging at 0 events. Exit and restart ZDAS cured this, but now all processors were switched off, also FAMP, although display claims it is on.
HEM! ⇒ There is a bug in the system, associated with the switching on/off of FAMP (ZDAS, YCLRTV)
6[15] Half the bug is found, its removal needs cooperation with Howard Mills.
Short Break in Petra
7:12 no Record $\int_{0}^{24^{00}}$ luminosity yesterday: ~~212~~ 154 nb^{-1} (for 1985) ← Look p. 145
7:46 z-chamber trip

9:00 Raunke, Spitzer
8:25 Argos check ok
13:30 Run 22202 stopped deadtime ≈100%. Purge / continue doesn't help. Run 22203 o.k.

16:00 Kleinwort, Smolik on shift
16:40 gas check ok.
~~17~~[10] VTXC: 2 Softtrips in Q_2
18[55] Message "SWITCH OFF HV" from PKR, 1 minute later "SWITCH ON HV"

10-8-85 0[00] Skaali, Elsen
0[15] Gas check done
1[15] "Illegal Jetc Data" frequently. Histogram indicates after ZLBS 31, 81, 187! Nothing changed yet.
Jetc-problem disappears after "touching" the relevant Jrbs.
6[15] Frequent JP-chamber soft trips. Chamber trips ≈ 1 min after coming up..
6[45] JPCH stable now, on.

RUN	DATE	START	STOP	AT RUN START I^+	AT RUN START I^-	DEAD TIME (%)	TIME (sec)	RECORDS IN	RECORDS OUT	All $\times 10^6$	TΦ REJ $\times 10^6$	T_1 ACC SUM	T_2 ACC SUM	T_1 BIT 2 $E_{LG} > 6$ GeV	T_2 BIT 47 $2T \cdot E_{47} \gg 2TR$
22183	8/8/85	22^{02}	22^{58}	4.04	4.21	14.0	3327	8002	3647	866	121	4656	5349	1274	20
22184	〃	22^{59}	23^{34}	3.15	3.29	11.8	2043	~~4607~~	1959	531	62	2747	3167	746	10
22185	9/8/85	0^{05}	0^{51}	6.13	6.14	26.4	2772	8002	4205	721	190	3783	5429	1023	18
22186	〃	0^{51}	1^{48}	5.06	5.08	19.6	2941	8002	4007	765	150	4110	5569	1906	23
22187	〃	1^{41}	2^{38}	4.17	~~4.26~~	15.6	3234	〃	3771	842	131	4455	5464	1233	33
22188	〃	2:38	3:00	3.41	3.45	13.1	1261	2993	1320	328	42	1756	2035	500	7
22189	〃	3:53	4^{05}	6.15	6.15	28.1	702	1988	1045	183	51	879	1384	223	5
22190	〃	4^{06}	4^{16}	5.85	5.86	21.0	586	1884	1009	152	32	850	1984	239	5
22191	〃	4^{16}	4^{30}	5.60	5.61	24.2	800	2316	1183	208	50	1118	1578	292	8
221923	〃	nothing!		Runs did not proceed, for unknown reasons											
22194	〃	4^{45}	4^{48}	5.00	5.02	29.5									
22195	〃	4^{49}	5^{24}	4.92	4.94	18.0	2090	5679	2794	544	98	2939	4004	811	15
22196	〃	7^{09}	7^{52}	6.17	6.16	24.0	2878	8002	4112	749	180	3710	5744	983	36
22197	〃	7:52	8:44	5.06	5.07	16.1	3072	8002	3796	799	128	4194	5647	1168	24
22198	〃	8:44	9:43	4.11	4.15	12.8	3477	8002	3609	904	116	4592	5609	1280	15
22199	〃	9:53	10:03	3.32	3.37	12.3	1178	2692	1150	306	37	1581	1763	422	7
22200	〃	11:07	11:55	5.84	6.22	20.3	2876	8002	4094	748	151	3829	5757	1049	27
22201	〃	11:56	12:46	4.74	5.07	12.6	8001	8002	3831	781	137	4211	5538	1231	16
22202	〃	12:46	13:00	3.90	4.18	14.2	812	2089	987	211	181	1147	1400	384	4
22203	〃	13:02	13:55	3.69	3.75	15.3	3156	8002	3537	820	125	4315	5570	1268	18
22204	〃	13:56	14:56	3.06	3.27	14.4	3620	8001	3345	941	135	5787	5317	1425	20
22205	〃	14:57	15:14	2.57	2.66	11.1	1006	2199	877	261	28	1355	1735	411	6
22206	〃	16:11	17:00	5.50	5.57	18.5	2934	8001	3938	764	141	4009	5678	1127	30
22207	〃	17:01	17:56	4.44	4.45	15.0	3126	8002	3709	814	122	4461	5579	1306	14
22208	〃	17:57	18:53	3.53	3.48	12.9	3362	8001	3532	875	113	4722	5435	1420	27
22209	〃	18:53	18:55	2.84	2.79	13.3	44	164	75	11	2	81	79	26	2
22210	〃	19:00	19:07	2.78	2.73	11.4	383	869	386	100	11	482	590	139	5
22211	10/8/85	1:45	2:38	5.21	5.24	14.9	3214	8001	3925	836	125	4117	5751	1049	23
22212	〃	2:39	3:40	4.09	4.26	15.0	3569	8002	3605	927	140	4533	5729	1258	19
22213	〃	~~5:40~~ 3:25	~~4:28~~ 3:41	3.25	3.41	12.4	2851	6425	2798	742	92	3762	4283	1063	13
22214	〃	5:02	5:55	6.27	6.29	28.6	2821	8002	4218	734	210	3755	5518	1107	19
22215	〃	5:55	6:50	4.95	4.88	25.1	3275	8001	3865	852	214	4338	5678	1301	29
22216	〃	6:50	7:41	3.98	3.87	13.4	2842	6826	3057	740	99	3927	4862	1091	25
22217	〃	8:50	9:37	5.69	6.40	21.6	2830	8002	4155	737	159	3944	5508	1103	23

PROCESSORS ON/OFF N50	MIP	TOF	FAMP	⟨L⟩ 10^{30} cm^{-2}s^{-1}	Bhabba ∫Ldt (nb)$^{-1}$	∫Ldt EXP. ENERGY	IBM/TAPE OUTPUT	At Run Start ID (μA)	At Run Start TOF (V)	ONLINE REJ. SUM MIPROC T_2 (%)	ONLINE REJ. NORD-50 $T_1 \cdot T_2$ (%)	Σ_{Bhabba}	MH	E_{BEAM}	Magfield -1=Gauss	Remarks
ON	ON	ON	ON	1.95	5.57	11068.01	IBM	0.7	0.45	47	57	63	1	21.802	4834	
〃	〃	〃	〃	1.34	2.39	11070.40	〃	〃	〃	49	60	27	0	21800	4833	beams dumped
〃	〃	〃	〃	3.91	9.72	11080.12	〃	1.6	0.95	37	50	110	3	21802	4833	
〃	〃	〃	〃	2.84	7.42	11087.54	〃	1.35	0.8	42	53	84	4	21.802	4832	
〃	〃	〃	〃	1.87	5.83	11093.37	〃	1.1	0.7	46	56	66	4	〃	4834	
〃	〃	〃	〃	1.55	1.94	11095.31	〃	?	?	48	59	22	0	21.800	4834	beams dumped
〃	〃	〃	〃	4.16	2.65	11097.96	〃	1.7	1.3	36	51	30	1	〃	4831	
〃	〃	〃	OFF	4.17	2.12	11100.08	〃	1.5	1.1	35	50	24	0	〃	4832	
〃	〃	〃	ON	3.68	3.36	11103.44	〃	1.4	1.0	41	52	38	0	〃	〃	
								1.4	1.0							Ignore
OFF	OFF	OFF	OFF	3.32	0.35	11103.79	〃	1.3	0.8	0	62	4	0	〃	〃	
ON	ON	ON	ON	2.67	4.85	11108.74	〃	〃	〃	44	54	56	1	〃	4833	beams lost
〃	〃	〃	〃	3.94	9.81	11118.55	〃	1.4	1.0	40	52	111	7	〃	4834	
〃	〃	〃	〃	2.98	8.30	11126.85	〃	1.3	0.95	43	55	94	1	〃	4831	
〃	〃	〃	〃	2.21	6.36	11133.21	〃	1.0	0.6	47	58	72	3	〃	4833	
〃	〃	〃	〃	1.55	2.12	11135.33	〃	0.8	1.6	46	60	24	1	〃	4835	beams dumped
〃	〃	〃	〃	3.91	9.37	11144.70	〃			39	52	106	0	〃	4838	
〃	〃	〃	〃	2.62	7.95	11152.65	〃	1.3	0.8	43	55	90	1	〃	4838	
〃	〃	〃	〃	2.18	1.94	11154.59	〃	1.0	0.6	45	56	22	0	〃	4840	
〃	〃	〃	〃	1.48	4.68	11159.27	〃	1.0	0.6	44	55	53	2	〃	4833	
〃	〃	〃	〃	0.98	3.36	11162.63	〃	1.1	0.7	48	61	38	0	〃	4841	
〃	〃	〃	〃	0.87	0.62	11163.25	〃	0.7	0.4	50	63	7	1	〃	4843	
〃	〃	〃	〃	3.12	8.48	11171.73	〃			42	54	96	0	21802	4841	
〃	〃	〃	〃	1.94	5.30	11177.03	〃	1.1	0.7	47	57	60	1	21802	4841	
〃	〃	〃	〃	1.24	4.68	11181.71	〃	0.85	0.55	49	59	53	2	21802	4841	
〃	〃	〃	〃	1.27	0.00	11181.71	〃	0.65	0.45	23	62	0	0	21802	4841	
〃	〃	〃	〃	0.96	0.44	11182.15	〃	0.6	0.4	46	59	5	0	21802	4842	beams dumped
〃	〃	〃	〃	3.24	11.04	11193.19	〃	1.3	0.8	43	54	125	1	21.800	4838	
〃	〃	〃	〃	2.13	7.07	11200.26	〃	1.0	0.55	48	58	80	4	21.800	4838	
〃	〃	〃	〃	1.60	4.86	11205.12	〃	0.8	0.45	47	59	55	0	21.802	4837	
〃	〃	〃	〃	3.88	11.13	11216.25	〃	1.7	1.4	38	50	126	4	21.800	4837	
〃	〃	〃	〃	2.50	7.07	11223.32	〃	1.2	1.0	45	54	80	0	21.800	4838	
〃	〃	〃	〃	1.93	4.33	11227.65	〃	1.0	0.6	49	58	49	2	21.800	4837	beams dumped
〃	〃	〃	〃	3.92	11.22	11238.87	〃	1.5	1.5	40	51	127	4	21.800	4837	DEC mining ries

10-8-85 8⁰⁰ J. Chrin & J. Hagemann on shift

8 25 Gas check done.
8 50 JDAS READOUT ERROR 45 - MP-16 analysis incomplete ; YY=1 at the same time message "no events for ... sec" on colour
8 56 VSPY : DL8's 145, 147, 149, 151 no hits (Wires 1153 - 1215), no success of the instructions given by expert
Expert will come soon
Broken power supply for V34 (+12V, +6V)

10 40 JDAS READOUT ERROR 45 - MP-16 analysis incomplete ; YY=1
10 50 Continuous missing burn br 2 or 3 : TOF 1 counters ; Try ↑ Pause / Continue run a few times
↓ error eventually disappears.

14 20 "NO TRIGGER" - problem PAUSE/CONTINUE several times did not help ⇒ stop run

14 30 Sometimes some crazy temperature alarms from the module "STRAHLROHR TEMPERATURÜBERWACHUNG" came without any reason (temperatures OK.). In most cases they stopped without doing anything, only a beep for a few seconds.

16⁰⁰ Bowdery & Zorn

16 25 Ch. 4, 23 + 26 beam pipe temp. gas alarm → then not | No events ⇒ Pause + Continue ; 16H
Gas check made.
16 40 Our lumi is lower than TASSO. PKR will be asked to improve the lumi at our interaction region.

16 48 The lumi is a little better now (maybe). Even the dead time seems lower now.

We have had several more Beam Pipe Temperature Alarms.
It appears to be a fault with some of the sensors or the electronics.
Channel 25 was reading 0°C. After a while it jumped back to normal and the alarm stopped.

21 30 Beam Pipe Temperature alarm on permanently. Channel 25 reads 0°C. We ignore this because we are too busy with multiple vertex chamber soft trips. PKR are optimizing for us.

22 25 Soft trip threshold for Q1 VTXC increased to 170 nA
Beam Pipe Temperature alarm disappears. If it returns, a cable (HH) may have to be pulled out at the box inside the JADE beam area.

00:00 ~

11-8-85 Kawagoe + Schneekloth

0 15 gas checked
1 28 ID. Vtx Ch. Soft trip
2 30 new fill ready, started run 22237, high TOF rate 2 V and dead time = 40%, $I_{\pm}$ = 6.3 mA
telephoned PKR to optimize

8⁰⁰ Weber & Middleton.
8 13 beam pipe temperature alarm for a few seconds.
8 43 new fill ready.
8 58 BPCL + ID soft trip
10 06 gas check done.
10 18 "No Trigger" problem - "Pause / Continue" did not help. - new run solved problem
10 29 beam pipe chamber trip, and jet chamber trip: reset and continue run;
11 09 "no trigger" problem; have to start a new run to solve problem
11 35 Herr Seidel comes in to look after the beam pipe temperature control system
channels 2 : −111°C → must be wrong ; all others look o.k.
Now cables of channels 2 and 25 are pulled out.
12 30 They had a new fill with ~67 mA for each beam : TOF-counter was reading ≥ 10 V ;
they tried to reduce it without much luck : dipoles fine, requires a new fill ;
Laurikainen was here to ~~take~~ some tests on the FAMP ; things everything is back in
running condition.
13 35 IBM transfer error (OCT): 000052 SUBERR (OCT): 000000 ERR.CNT (OCT): 000000
14 05 ID + ORCH soft trip
14 39 JDAS read out error 46 - MP16 out of sequence : YY = 1
14 48 Muon gate missing ; faulty part: 14 comes very often
15 00 Jan Chr. comes in to fix muon crate trouble ; (Swapped Strb Board - This seems to have solved problem. JC)

16⁰⁰ Noroska, Bethke on shift
16 10 Gas checks done.
16.40 New fill ready.
High dead time although currents are not too high (~ 6 mA)
17.00 ID Soft trip caused chain reaction:
Run stopped - no triggers, when ID up Computer hung up.
Restart - NSO - could not be started - cancel batch job - Start again
Meanwhile could plotter clung to last run - summary.
Tried to get it. 2/3, 4/1, 3/4, 2/3, etc.
All sorts of Lamps in all branches missing. Then everything mysterious by works.

154 Run	DATE	START	STOP	AT RUN START I^+	AT RUN START I^-	DEAD TIME (%)	TIME (sec)	RECORDS IN	RECORDS OUT	ALL $\times 10^6$	TØ REJ $\times 10^6$	T_1 ACC SUM	T_2 ACC SUM	T_1 Bit 2 $E_{LG} > 6$ GeV	T_2 Bit 17 $2T \cdot E_{LG} > 27$
22218	10/8/85	9:41	10:32	4.61	5.09	16.2	3037	8002	3840	790	128	4298	5583	1262	37
22219	"	10:32	11:23	3.78	4.17	15.6	3005	7318	3441	781	121	4068	5186	1200	26
22220	"	12.04	12:51	6,32	5,79	30,4	2800	8002	4230	728	221	3717	5702	1187	27
22221	"	12:51	13:40	5,22	4,58	19,2	2872	8001	3949	747	143	4208	5480	1332	19
22222	"	13:40	14:19	4,33	3,76	16.8	2307	6322	3059	600	101	3467	4183	1084	19
22223	"	14:22	15:19	3.74	3.22	15.7	3384	8001	3758	880	138	4607	5647	1464	29
22224	"	15:19	15:23	3.09	2.63	12.6	219	516	231	57	7	292	371	88	1
22225	"	16:09	16:55	6.05	6.01	30.9	2758	8002	4093	717	221	3733	5552	1184	29
22226	"	16.56	17.44	4.98	4.78	17.9	2882	8002	3917	749	134	4395	5356	1405	32
22227	"	17.54	18:48	3.96	3.83	13.9	3234	8002	3703	841	117	4716	5317	~~1576~~ 1535	28
22228	"	18.49	18.54	3.25	3.17	12.0	320	788	351	83	9.9	464	492	135	4
22229	"	20:26	21.13	5.91	6.11	21.2	2774	8002	4065	721	152	3974	5713	1207	31
22230	"	21.14	21:57	4.88	5.06	15.0	2410	6270	2835	627	93	3597	4499	1084	14
22231	"	21.58	22.27	3.91	3.89	9.5	1698	4207	1855	441	42	2598	2891	799	8
22232	"	22.28	22.49	3.52	3.51	12.4	1264	3074	1338	328	40	1828	2032	581	13
22233	"	22.50	22.57	3.27	3.25	12.0	403	967	400	104	12	547	633	154	1
22234	"	23.34	0:24	5.34	5.44	22.5	2946	8002	4071	766	132	3931	5708	1138	24
22235	11/8/85	0.24	1.15	4.42	4.37	15.5	3031	8001	3926	788	122	4305	5435	1349	22
22236	"	1.15	2.04	3.68	3.58	13.7	2747	6568	2890	715	98	3814	4436	1084	23
22237	"	2.31	3.19	6.32	6.32	29.1	2797	~~8002~~ ~~4179~~	4179	728	212	3684	5645	1115	29
22238	"	3.19	4.08	5.21	5.21	209	2916	8002	3959	758	159	4204	5488	1288	27
22239	"	11.07	5.03	4.27	4.30	13.7	3261	8002	3587	849	116	4564	5445	1355	29
22240	"	5.03	5.45	3.50	3.54	12.4	2474	5696	2464	644	80	3455	3760	972	11
22241	"	6.17	7.12	5.01	5.25	15.7	3269	8001	3808	850	133	4327	5553	1206	26
22242	"	7.12	7.36	3.17	3.38	11.9	1358	3061	1278	353	42	1758	2137	471	8
22243	"	8.50	9.45	6.50	6.69	30.6	2826	8001	4231	736	225	3582	5586	1017	32
22244	"	9.46	10.18	5.17	~~5.82~~	21.9	1920	5490	2774	500	109	2690	3816	788	15
22245	"	10.20	11.09	4.52	4.66	15.5	2609	6726	3233	879	705	3699	4700	1109	15
22246	"	11.10	12.05	3.76	3.89	12.7	3264	7727	3489	850	108	4403	5334	1253	30
22247	"	13.06	13.59	6.61	6.65	30.1	2817	8002	4229	733	220	3657	6272	1085	43
22248	"	14.00	14.52	5.27	5.28	19.8	2918	8002	4079	759	150	4155	5757	1211	23
22249	"	14.52	15.46	4.14	4.16	15.2	3200	8001	3772	852	127	4467	5546	1277	28
22250	"	15.46	16.12	3.26	3.29	11.9	1548	3533	1552	403	48	2123	2434	577	6
22251	"	16.44	16.54	5.89	5.94	37.5	572	1657	948	149	55	686	1125	216	8
22252	"	16.55	17.38	5.58	5.58	21.5	2529	7524	~~6570~~ 3570	~~6588~~ 6588	141	3625	5394	1078	21
22254	"	17.46	18.40	4.36	4.14	15.2	3224	8002	3801	839	127	4474	5598	1237	27

PROCESSORS ON/OFF VSD	MIP	TOF	FAMP	$\langle L \rangle$ 10^{30} cm^{-2} s^{-1}	Bhabha $\int L\,dt$ nb^{-1}	$\int L\,dt$ EXP. ENERGY	IBM/TAPE OUTPUT	At Run Start ID (μA)	At Run Start TOF (V)	ONLINE REJ. SUM MIPROC T_2 %	ONLINE REJ. WORD-SO T_1 & T_2 %	$\sum_{Bhabha}$	MH	E_{BEAM}	Mag. Field ~12 Gauss	Remarks
ON	ON	ON	ON	2.62	6.80	11245.67	IBM	1.2	0.9	45	55	77	1	21.802	4837	
"	"	"	"	1,80	4,59	11250.26	"	1.0	0.8	46	56	52	0	21,800	4840	beams lost
"	"	"	"	3,02	7,77	11258,03	"	1.6	1.6	40	50	88	4	21,800	4840	
"	"	"	"	2,63	6,10	11264,13	"	1.3	0,95	43	54	69	0	21,800	4840	
"	"	"	"	1.85	3.80	11267.90	"	1,2	0,85	44	55	43	2	21.802	4840	Run stopped, due to NO TRIGGER problem
"	"	"	"	1.29	3.89	11271.79	"	0.9	0,75	49	56	44	2	21.802	4841	
"	"	"	"	1.12	0.18	11271.97	"	0.8	0.65	52	59	2	0	21.800	4840	beam lost
"	"	"	"	3.07	9.63	11281.60	"	1.7	1.5	39	52	109	3	21.800	4838	
"	"	"	"	2.58	6.89	11288.49	"	1.2	0.88	45	54	78	1	21.802	4838	
"	"	"	"	1.75	5.83	11294.32	"	0.9	0.62	48	56	66	1	21.802	4838	
"	"	"	"	1.28	0.44	11294.76	"	?	?	45	59	5	0	21.800	4837	beams dumped
"	"	"	"	3.48	10.25	11305.01	"	?	?	40	51	116	1	21.802	4835	
"	"	"	"	2.60	5.57	11310.58	"	1.2	0.9	45	56	63	1	21.800	4834	
"	"	"	"	2.11	2.92	11313.50	"	1.0	0.58	48	57	35	1	21.800	4832	Without VTXC ←
"	"	"	"	1.68	2.30	11315.80	"	0.8	0.5	47	59	26	0	21.800	4834	run was stopped (NO TRIGGERS)
"	"	"	"	1.77	0.44	11316.24	"	0.8	0.45	43	62	5	0	"	4834	Beams dumped
"	"	"	"	2.81	8.04	11324.28	"	1.25	1.3	42	52	91	1	"	"	
"	"	"	"	2.11	6.63	11330.91	"	1.1	0.8	43	54	75	2	"	"	
"	"	"	"	1.46	3.53	11334.44	"	?	?	47	59	40	1	"	"	Beams Dumped.
"	"	"	"	3.50	9.28	11342.72	"	1.6	2.0	38	51	105	4	"	"	
"	"	"	"	2.86	5.83	11348.55	"	1.3	1.4	43	54	66	1	"	4833	
"	"	"	"	1.93	4.95	11353.50	"	1.0	0.7	46	58	56	3	"	4834	
"	"	"	"	1.50	3.53	11357.03	"	0.9	0.7	48	59	40	1	"	4833	beams dumped
"	"	"	"	2.27	6.89	11363.92	"	1.2	0.8	44	55	78	3	"	"	
"	"	"	"	1.34	1.06	11364.98	"	0.8	0.5	48	61	12	1	"	4834	beams dumped.
"	"	"	"	3.80	12.10	11377.08	"	1.8	2.0	38	50	137	3	"	4835	
"	"	"	"	2.79	4.86	11381.94	"	1.3	1.4	41	52	55	1	21.802	4835	run was stopped (NO TRIGGERS)
"	"	"	"	2.28	5.57	11387.51	"	1.1	0.7	46	55	63	1	"	4838	" " " (" ")
"	"	"	"	1.60	3.98	11391.49	"	0.9	0.65	46	58	45	0	"	4837	beams dumped
"	"	"	"	3.35	8.83	11400.32	"	1.5	1.5	40	49	100	2	"	4841	
"	"	"	"	2.87	7.86	11408.18	"	1.3	0.8	44	52	89	0	"	"	
"	"	"	"	1.78	7.42	11415.50	"	1.0	0.65	47	56	84	1	"	"	
"	"	"	"	1.29	1.50	11417.00	"	0.8	0.5	50	58	17	1	"	4840	beams dumped
"	"	"	"	3.04	1.94	11418.94	"	1.6	1.7	37	45	22	1	21.802	"	
"	"	"	OFF	2.99	8.04	11426.98	"	1.5	2.0	42	50	91	2	"	"	FAMP OFF
"	"	"	ON	1.71	5.21	11432.19	"	1.0	0.8	47	55	59	3	"	"	FAMP ON

156 RUN	DATE	START	STOP	I+	I−	DEAD	TIME	REC IN	OUT	ALL TG	TG REC	T1 ACC	T2 ACC	T1 BIT T2	T2 BIT T1
22255	11/8	18.40	18.53	3.40	3.20	15.3	747	1795	855	194	29	1038	1212	278	6
22256	"	19.26	20.14	5.72	5.76	24.4	2819	8001	4313	733	178	3524	5490	1086	41
22257	"	20.18	21.11	4.47	4.48	18.3	3142	8002	3918	817	149	4289	5764	1201	29
22258	"	21.12	21.40	3.49	3.51	14.3	1690	4266	2045	439	63	2427	3016	638	18
22259	"	22.12	23.03	5.76	5.85	26.3	2905	8002	4276	755	198	3858	5867	1061	23
22260	"	23.04	23.55	4.49	4.57	16.3	3057	8002	3902	796	130	4349	5654	1237	23
22261	"	23.55	0.23	3.52	3.38	12.6	1665	3845	1804	433	55	2209	2738	610	10
22262	12/8	1.01	1.08	5.75	5.68	31.2	318	953	540	83	26	420	644	112	2
22263	"	1.39	2.28	6.01	5.89	21.5	2916	8002	4187	759	163	3993	5705	1026	25
22264	"	2.28	3.20	4.70	4.61	16.4	3062	8001	3911	747	131	4322	5685	1154	15
22265	"	3.20	4.01	3.69	3.62	13.2	2179	5061	2315	567	75	2887	3580	786	13
22266	"	4.28	5.17	5.89	5.82	20.4	2892	8002	4215	752	153	4075	5514	1050	24
22267	"	5.17	6.10	4.66	4.59	14.9	3152	8002	3745	820	122	4492	5586	1202	20
22268	"	6.10	6.48	3.79	3.74	12.7	2235	5302	2426	582	74	3156	3572	839	14
22269	"	7.19	8.08	6.10	6.20	23.5	2874	8002	4206	749	176	4044	5536	1109	21
22270	"	8.08	9.00	4.46	5.02	16.6	3058	8002	3852	796	132	4444	5418	1278	25
22271	"	9.01	9.57	4.03	4.09	13.2	3357	8002	3618	874	115	4658	5550	1281	25
22272	"	9.57	10.17	3.27	3.32	11.9	1198	2701	1162	312	37	1615	1812	448	8
22273	"	10.49	11.35	6.11	6.21	17.7	2709	8002	4189	705	125	4045	5502	1175	27
22274	"	11.36	12.30	4.48	4.53	14.1	3022	8001	3997	787	111	4389	5468	1235	17
22275	"	12.30	13.12	3.94	3.79	12.8	2472	5940	2772	643	82	3516	4045	982	17
22276	"	13.39	14.26	6.02	6.06	17.4	2760	8002	4123	718	125	4045	5610	1108	26
22277	"	14.26	15.17	4.74	4.48	14.6	3057	8002	3863	795	116	4433	5601	1258	36
22278	"	15.17	15.32	3.73	3.49	13.9	854	2072	978	222	31	1178	1468	300	9
22279	"	17.11	17.04	5.88	5.91	18.4	2949	8002	4093	768	141	4414	5669	1086	21
22280	"	17.04	18.00	4.54	4.34	13.6	3331	8002	3764	749	117	4481	5718	1173	23
22281	"	18.00	18.18	3.49	3.31	12.6	1014	2344	1065	264	33	1353	1593	352	7
22282	"	19.03	19.54	6.14	6.00	19.9	2900	8001	4097	755	150	3951	5710	1084	26
22283	"	19.52	20.31	4.83	4.55	15.0	2272	5835	2908	591	87	3132	4015	823	25
22284	"	20.31	21.17	4.09	3.69	12.8	2509	5799	2617	653	83	3344	4125	837	20
22285	"	23.27	0.21	5.87	5.62	17.1	3127	8002	4006	814	193	4227	5868	1046	19
22286	13.885	0.21	1.17	4.72	4.52	14.5	3341	8001	3750	869	126	4459	5521	1151	26
22287	"	1.18	2.06	3.80	3.63	12.7	2728	5883	2614	709	90	3545	4110	972	9
22288	"	2.34	3.26	5.93	5.97	20.0	3040	8001	4014	791	158	4178	5432	1174	26
22289	"	3.26	4.21	4.77	4.78	15.1	3268	8001	3775	850	128	4513	5490	1247	22

NSD	MIP	TOF	FAMP	⟨L⟩	∫L Bha	∫Idt Exp	IBM	ID	TOF	MIP REJECT	NSD REJECT	Σ Bha	MH	E Beam	MagF	REMARKS
ON	ON	ON	ON	1.45	0.80	11432.99	IBM	0.8	0.6	49	56	9	1	21.800	4.840	beams dumped
"	"	"	"	2.86	8.57	11441.56	"	1.44	1.3	40	49	97	1	"	"	
"	"	"	"	1.90	5.74	11447.30	"	1.1	1.0	46	54	65	0	21.802	4.838	
"	"	"	"	1.22	1.50	11448.80	"	1.0	0.8	49	55	17	2	21.800	4.837	beams dumped
"	"	"	"	2.60	6.80	11455.60	"	1.4	1.5	43	50	77	1	21.802	4.834	
"	"	"	"	1.98	~~6.77~~	11460.37	"	1.0	1.0	45	54	54	1	"	38	
"	"	"	"	1.58	2.47	11462.84	"	0.8	0.6	48	56	28	0	"	4838	beams dumped
"	"	"	"	3.09	1.33	11464.17	"	1.4	1.5	37	47	15	1	"	4838	beam lost
"	"	"	"	3.31	9.63	11473.80	"	1.4	1.1	41	50	109	4	"	4838	
"	"	"	"	2.37	5.57	11479.37	"	1.2	0.8	46	54	63	0	"	4837	
"	"	"	"	1.64	3.09	11482.46	"	0.9	0.6	48	57	35	0	"	4838	beams dumped
"	"	"	"	3.48	9.90	11492.36	"	1.4	1.1	41	50	112	2	"	4837	
"	"	"	"	2.43	7.42	11499.78	"	1.1	0.7	46	56	84	5	"	4837	
"	"	"	"	1.72	3.09	11502.87	"	0.9	0.55	48	57	35	3	"	"	beams dumped
"	"	"	"	3.83	8.04	11510.91	"	1.45	1.3	41	50	91	6	21.802	4835	
"	"	"	"	2.88	7.86	11518.77	"	1.20	0.74	44	55	89	5	"	"	
"	"	"	"	1.84	5.04	11523.81	"	1.00	0.60	48	57	57	1	"	"	
"	"	"	"	1.32	1.59	11525.40	"	0.80	0.44	49	60	18	1	"	"	beams dumped
"	"	"	OFF	4.21	11.57	11536.97	"	1.40	0.95	41	50	131	4	21.800	4835	FAMP off (being worked on)
"	"	"	OFF	2.77	9.10	11546.07	"	1.20	0.70	45	53	103	0	"	4837	—" —
"	"	"	OFF	1.83	4.59	11550.66	"	0.90	0.55	49	56	52	0	21.802	4839	—" — beams dumped
"	"	"	~~OFF~~	3.89	9.28	11559.94	"	1.40	1.00	40	51	105	2	21.800	4838	—" —
"	"	"	OFF	2.45	7.07	11567.01	"	1.15	0.7	45	54	80	2	"	4840	—" —
"	"	"	ON	1.91	1.24	11568.25	"	0.9	0.5	49	56	14	1	"	4839	FAMP back ON beams dumped
"	"	"	ON	3.43	9.19	11577.44	"	1.4	1.0	42	52	104	2	21.802	4838	
"	"	"	ON	2.30	6.01	11583.45	"	1.0	0.6	47	55	68	3	21.800	4837	
"	"	"	ON	1.50	1.50	11584.95	"	0.8	0.5	47	57	17	2	21.802	4838	beams dumped
"	"	"	ON	3.9	11.57	11596.52	"	1.5	1.1	40	52	131	6	21.802	4837	
"	"	"	"	2.66	6.01	11602.53	"	1.1	0.7	43	53	68	0	21.800	4837	run was stopped (no TRIGGER)
"	"	"	"	1.91	3.62	11606.15	"	0.85	0.55	49	57	41	0	21.800	4838	beams dumped
"	"	"	"	4.03	12.72	11618.87	"	0.70	0.8	41	52	144	2	21.802	4835	
"	"	"	"	~~12.22~~ 2.53	8.31	11619.18	"	1.05	0.6	45	56	94	5	21.802	4834	
"	"	"	"	1.86	4.51	11623.69	"	0.8	0.45	50	58	51	1	21.800	4834	beams dumped
"	"	"	"	3.83	11.40	11635.09	"	0.7	0.8	40	52	129	3	21.800	4834	
"	"	"	"	2.70	9.19	11644.28	"	0.55	0.60	45	55	104	1	21.800	4834	

11.8.85

22.30 Muon Crate 14 missing permanently. Call Jan Chrin. He says: Wait for K. Stephens.

During last fill I was in PKR. They may try what they want no improvement possible for Jade. It turns out that there is a small vacuum leak in W. Maybe that is the problem.

12.8.85

0.00 Krehbiel & Stephens

1.00 New fill. "Event" lamp hints that deadtime is caused by "long" events, (~~up~~ up to some seconds / event) not by high rate.

Run # 22264 JDAS readout error 46 – TP16 out of sequence; YY = 1

" " " 45 – MP-16 analysis incomplete; YY = 1

" " " " " " " " " "

3.25 22265 I.D. & Vertex ch. 50/k trips.

3.50 Tasso say need fill in ~ 10 mins

To ID experts: There where false alarms: Twice after "down" we could not run up the ID, because an alarm flag was set with no input, i.e. a 50-Ω-piece. It was in the alarm crate of rucksack, rack 6, above the HV motor drive, 4th plug-in from right, top channel (No 77)

8.00 Cashmight, Skaard on shift

8.20 Gas check done – OK

9.10 Muon crate 14 missing twice in last 5 minutes – this was a problem yesterday but not during the night when a muon expert was on shift (of course). If problem persists we will call Jan Chin. [9.20 Jan Chin calls us about µ 14 – but at the moment it's OK.]

9.24 Missing LAM br 2 or 4 TOF2

10:50 JDAS readout error 46 – MP-16 out of sequence; YY=1

10:52 —— " —— 33 – Missing LAM br 2 or 4 : TOF2 counters

11:14 —— " —— " ——

11.55 Beampipe temperature alarm – ch 5 – second one this shift; but ch 5 shows –0.1°C – no cause for alarm? Phone Batel – he says someone will come and look at the box. (Maschinenhaus)

11.52 Terminal suddenly refused to speak to us, though data taking proceeded normally. Switching it off and on gets it working again.

12.10 Jan leaves. Contacts in crate 14 have been cleaned – he hopes this will solve the "crate missing" problem.

12.12 Bfield alarm again (ch 5). Again 13.43

12.15 Z-chamber alarm, for no good reason. This seems to be happening about once per day. Everything seems to be OK. I suspect occasional breakdown of a set of dividing wires. I do not propose to do anything about it until Richard comes back (unless it gets a lot worse) because the next step is putting on dividing wire HT cables, and the said cables carry 3kV. Further, until the problem gets worse, it is so intermittent that I probably could not locate the offending wires anyway. Simultaneously – vertex chamber valve failure, reset OK following instructions in gas house.

13.52 BPCH trip. First one for ten hours. (Q13)

14.04 MP-16 analysis incomplete; YY = 1.

14.50 RZ expert ① resurrects our Tektronix
② looks at our Gould, pronounces the toner too old, and recommends talcum powder to alleviate the sticking-to-the-roller problem. (IT IS ALSO GOOD FOR CHAPPED LEGS ??)

15.00 JDAS readout error 33 – Missing LAM br. 2 or 4 : TOF2 counters

15.13 MP-16 analysis incomplete.

15.25 Enter RZ man bearing gifts – in the shape of a bottle of guaranteed-not-antiquated toner, which should improve the quality of our plots.

16.00 Smolik and Kirkby on shift

16.20 Gas checks O.K.

20.30 No triggers – PAUSE-CONTINUE doesn't help, start new run O.K.

13.8.85

0:00 Kleinwort, Middleton on shift

0:30 Gas check done OK.

1:36 µ crate 14 missing – reset OK

also:- "No triggers" message – solved by pause/continue.

also:- JDAS READOUT ERROR 45 – MP16 analysis incomplete; YY=1

2.40 BPCH trip

2.45 µ crate 14 missing – reset OK

3.39 µ crate 14 missing – reset OK.

3.42 "

4.09 "

4.18 µ crate 7 missing – reset OK & now 14 again (reset OK).

RUN	DATE	START	STOP	AT RUN START I⁺	AT RUN START I⁻	DEAD TIME (%)	TIME (SEC)	RECORDS IN	RECORDS OUT	ALL ×10⁶	TΦ REJ ×10⁶	T₁ ACC SUM	T₂ ACC SUM	T₁ BIT 2 E_LG 76 GEV.	T₂ BIT 17 2T₁ E_LG · 7/2T₁
22290	13/3/85	4:21	5:21	3.85	3.86	12.2	3572	8002	3530	929	113	4707	5549	1270	18
22291	"	5:22	5:37	3:11	3:12	11:6	717	1575	676	187	22	944	1084	249	3
22292	"	~~6:14~~ 6:14	~~7:08~~ 7:08	6.09	6.12	20.5	3037	8002	4029	790	162	4135	5515	1165	22
22293	"	709	804	4.81	4.79	15.4	3216	7989	3681	837	129	4583	5329	1297	26
22295	"	8^{33}	9^{22}	6.27	6.32	21.6	2951	8002	3988	768	166	4062	5583	1139	28
22296	"	923	10^{16}	5.02	4.86	17.8	3212	8001	3844	836	148	4446	5508	1274	23
22297	"	10^{17}	11^{15}	4.04	3.84	13.5	3450	7937	3539	898	122	4735	5314	1355	20
22298	"	13^{49}	14^{11}	6.17	6.19	21.2	3104	8002	4063	808	171	3965	5652	965	16
22299	"	14^{12}	14^{15}	4.87	4.63	17.5	164	491	232	43	7	249	285	63	1
22300	"	14^{49}	14^{50}	6.13	6.04	44.8	20	111	53	5	2	27	38	4	0
22301	"	1538	1630	5.69	5.66	23.6	3107	8001	4211	808	196	3954	6035	1014	36
22302	"	~~1630~~ ~~1730~~	~~1732~~ ~~1830~~	4.26	4.11	13.9	3274	7617	3576	852	118	4309	5425	1076	24
22303	"	18.07		4.74	4.53										
22304	"	18.12	18.58	5.87	5.27	24.8	633	1700	898	165	41	796	1280	197	6
22305	"	1900	1956	5.21	5.09	17.4	3192	8002	4269	830	165	4234	5676	1102	29
22306	"	1959	20:11	3.43	3.11	14.7	702	1626	789	183	27	907	1167	250	5
22307	"	20.42		5.8											
22308	"	20.53	21:16	4.54	5.48	19.7	1253	3331	1609	326	64	~~2442~~ 1642	2422	404	14
22309	"	22.10	23:05	4.59	5.15	16.3	3273	8001	3953	851	139	4281	5737	1163	35
22310	"	23.06	0:07	3.29	3.72	12.5	3617	8001	3454	941	117	4697	5613	1276	24
22311	14.8.85	0:07	0:38	2.39	2.72	12.5	1809	3743	1494	471	59	2304	2568	600	12
22312	"	1:21	2:20	5.77	5.96	27.1	3317	8001	3980	863	234	4113	5686	1128	26
22313	"	2:20	3:16	4.08	4.21	14.5	3318	8002	3636	863	126	4548	5553	1388	19
22314	"	3:16	3:37	2.98	3.10	11.8	1240	2716	1163	323	38	1650	1848	465	8
22315	"	4:31	5:23	5.93	5.86	22.0	2994	8002	3992	779	171	4087	5742	1175	23
22316	~~5/8/85~~ "	5:23	6:18	4.31	4.26	16.2	3259	8001	3645	848	137	4462	5519	1333	30
22317	"	618	713	3.16	3.15	11.9	3246	7130	3074	845	~~2101~~ 1771	4343	4852	1281	15
22318	"	746	839	4.89	4.99	15.6	3180	8002	3775	827	129	4381	5667	1275	18
22319	"	840	939	~~4.83~~ 3.55	3.57	13.0	3545	8002	3450	923	120	4784	5418	1486	18
22320	~~5/8/85~~ "	940	10^{34}	2.56	2.59	10.7	3220	6762	2783	838	89	~~4285~~ 4534	1307	17	
22321	15.8.85	2:04	3:02	4.86	5.16	34.9	3077	8002	4463	801	279	3739	5999	1327	33
22322	"	3:03	4:03	3.57	3.82	17.2	3381	8002	3833	879	152	4329	5906	1378	23
22323	"	4:04	4:35	2.66	2.87	11.5	1621	3461	1516	422	44	2072	2487	672	14

PROCESSORS ON/OFF NSO	MIP	TOF	FAMP	⟨L⟩ 10^{30} cm^{-2} s^{-1}	Bhabha $\int L\,dt$ nb^{-1}	$\int L\,dt$ EXP. ENERGY	IBM / TAPE OUTPUT	AT RUN START ID (MA)	AT RUN START TOF (V)	ONLINE REJ SUM MIRROR T_2 %	ONLINE REJ NOAD − 50 T_1+T_2 %	Σ_{Bhabha}	MH	E_{BEAM}	MAG FIELD −1 KGAUSS	REMARKS.
ON	ON	ON	ON	1.77	6.36	11650.64	"	~~0.8~~ 0.5	0.5	48	58	72	4	21.802	4831	
"	"	"	"	1.18	0.97	11651.61	"	0.7	0.4	48	60	11	0	21.802	4828	beams dumped
"	"	"	"	4.02	11.57	11663.18	"	1.4	0.7	40	52	131	2	21.800	4831	"no VTXC-0.4", only trips
"	"	"	"	2.56	7.60	11670.78	"	1.1	0.6	45	56	86	0	21.802	4844	VTXC: 1450 V half lost half dumped
"	"	"	"	4.04	12.01	11682.79	"	1.5	0.9	41	53	136	2	21.800	4842	VTXC back to 1475 V
"	"	"	"	2.58	7.78	11690.57	"	1.1	0.65	45	54	88	6	21.802	4847	
"	"	"	"	1.89	7.86	11698.43	"	?	?	48	458	89	4	21.800	4849	beams dumped
"	"	"	"	3.75	10.25	11708.68	"	1.4	0.9	41	52	116	4	21.800	4840	
"	"	"	"	2.32	0.27	11708.95	"	1.1	0.7	34	57	3	0	21.800	4840	beams partially lost → dumped
"	"	"	"	0.00	0.00	11708.95	"	1.5	1.2	-36?	65	0	0	21.802	4841	beams dumped
"	"	"	"	2.91	8.22	11717.17	"	1.4	1.2	43	60	93	1	21.800	4840	
"	"	"	"	1.81	6.27	11723.44	"	1.0	0.6	48	56	71	5	21.800	4841	beams dumped
								1.1	.72							beams dumped after 1 min
"	"	"	"	3.25	1.94	11725.38	"	1.4	1.0	41	51	22	0	21.800	4842	
"	"	"	"	1.91	5.21	11730.59	"	1.2	0.85	44	49	59	1	21.800	4843	
"	"	"	"	1.17	0.62	11731.21	"	0.9	0.9	48	54	7	1	21.800	4842	beams dumped
	no	data	Nachfang up					1.4	1.3							
"	"	"	"	2.45	2.21	11733.42	"	1.2	1.0	40	54	25	0	21.800	4841	lost dumped beams
"	"	"	"	2.09	6.54	11739.96	"	1.2	0.8	~~45~~ 53	53	74	1	21.800	4840	
"	"	"	"	1.08	2.83	11742.79	"	0.8	0.55	49	59	32	1	21.800	4840	
"	"	"	"	0.63	0.85	11743.67	"	0.6	0.38	57	63	10	0	21.802	4841	beams dumped
"	"	"	"	2.95	9.01	11752.68	"	1.4	1.1	41	53	102	2	21.802	4840	
"	"	"	"	1.73	6.18	11758.86	"	1.0	.68	47	57	70	3	"	"	
"	"	"	"	1.14	0.62	11759.48	"	0.7	0.5	51	60	7	4	"	4841	beams dumped
"	"	"	"	3.33	9.54	11769.02	"	1.6	1.1	42	53	108	2	21.800	4837	
"	"	"	"	1.84	5.57	11774.59	"	1.0	0.75	46	57	63	2	"	4846	
"	"	"	"	0.98	4.06	11778.65	"	0.85	0.55	50	59	46	1	21.802	4840	beams dumped
"	"	"	"	2.53	7.95	11786.60	"	1.2	~~0.8~~ 0.5	44	55	90	2	21.802	4837	
"	"	"	"	1.36	4.33	11790.93	"	0.9	0.6	48	59	49	1	21.802	4838	
"	"	"	"	0.72	3.00	11793.93	"	0.6	0.4	52	61	34	0	21.802	4839	beams dumped
"	"	"	"	1.33	3.53	11797.46	"	1.4	1.7	44	47	40	0	21.800	4847	
"	"	"	"	1.21	3.18	11800.64	"	0.9	1.5	49	55	36	1	"	4850	
"	"	"	"	0.84	1.06	11801.70	"	0.6	0.5	52	59	12	0	21.802	4840	beams dumped

5[00] pr crate 14 has gone missing >10 times in last hour.
5[25] At last pr crate 14 seems to behave (for a while). It has been this crazy since start of new run – coincidence ?!
6[14] JDAS READOUT ERROR 33 – missing LAM; branch 2 crate 3: TOFS counter
pr crate 14 missing again – I spoke too soon!
6[49] BPC keeps tripping off.
7[00] magnet wandered just outside tolerance – redefined magnet amps – brought it back to nominal value.
7[50] Continual problems with mon crate 14 missing – it will not reset in hardware room.

8[00] Kawagoe + Hagemann
8[22] Gas check done.
8[42] MUON CRATE MISSING (14)
8[45] VTX ch hard trip
10[50] Missing T1 input & output connected to TOF latches, B. Wanka will come
13[46] Problem with missing T1 input solved. Bad contact in LEMO-cassette.
15[38] VTX Ch ~~Hard trip~~ 15[46] again.

16[00] Stephens & Zorn
16[50] JDAS error 46 – MP-16 out of sequence; YY=1
16[55] Z & Vert. chamber hard trip.
17[05] Vert hard trip.
JDAS readout error 74 – wrong LAM branch 1 crate 1 ÷ Beampipe chamber
" " " 46 – MP-16 out of sequence; YY=1

17[25] Tasso new fill at ~17[20]. Poor lifetime of beams – bad vacuum.
17[29] VTX & I.D >>1 trip.
19[00] VTX Band trip. R22305 N50 is now doing PATREC only if NHITS<250 (previous 350); test to see deadtime dependence
19[10] Z ch trip. ⇒ Not a big difference from previous run.
19[20] VTX chamber hard trip.
NB whilst VTX was off inst. dead time dropped to ~8.5% almost at once and rose to ~19% as soon as it was on.

20[00] # 22306 N50 returned to PRE # 22305 running.
20[43] VTX chamber and I.D. Hard trip also WORD 10 hang up. at start of # 22307
⇒ no data for this run

21[05] VTX ch hard trip.

0:00 Schmekloth & Smolik
0:44 Gas checks OK.
1[30] several VTX CH. trips

8[00] Kuhlen, Bethke
8[12] "false interrupt" on the system console several times

```
08.11.04 ERROR 37; IOX ERROR
ADDRESS:    6746; LEVEL(DEC.):      10

08.11.05 ERROR 22 AT    2622; FALSE INTERRUPT
LEVEL(DEC.):      10; IDENT CODE(OCT.):      0
```

(due to Flemming Task reading VTX currents via PC and RT task)
don't worry too much about this

9.23 Magnet current decreases to 4 7480! Runs up again after short time (automatically)
9[40] Muon crate 14 missing, every few minutes. Reset in hardware room only sometimes successfull
10.31 Remaining beams (1.3 mA) dumped, new fill probably not before 15:00.
Problems with PIA
Magnet current lowered to 500 A
11.53 Magnet sleepwalking to 1300 A
15[00] Have installed an automatic switchoff in readout of z-chamber, i.e. data taking continues without z-chamber and without reading out of z-chamber, until HV of z-chamber is on again. The same alarm as for VTX-ch. trip is given. If both VTX ch and z-ch trip, data taking must be paused as usual. Nota Bene! This is a test, the permanent installment needs the approval of JADE meeting! J.O.
22[00] replaced with old version for the night, is not yet tested!
15[25] Now "Restart cd. 17[30]".
15[55] Found that big fans (roof of the hall) are all off, though switched to Maxim. Temp. in Hall now ≥31°C; behind V34-racks ~40°C (!!).
Phoned Schulz, he will send somebody. Obviously fuse broken somewhere, because "Freigabe Lüften" is still there.
16[10] big fans working again ⇦ please check from time to time again
16[00] Spitzer and Kawagoe

15/8/85

00⁰⁰ Stephen & Kado

00:10 gas check done, ok.
2 05 Luminosity Run
2 10 VTX dead ~~hard trip~~ soft trip (bad beam during background optimization)
3:00 Magnet went by itself down to 7000 Amps – raised up again to 7600 by hand
3:19 I noticed the YIBMPC-Task to be dead. Is that any special reason for this ? — There is no hint given in the log-book, so I rebuild this task. (FH)

After Petra restarted several muon chamber were drawing excessive signal currents which affected the H.V. to the chamber. The following chamber were disconnected during runs # 22321 – 22323
140, 158, 174–186 inc. 297, 298, 606, 608, 609, 610, 633 K.S.
YSPY will show digitizer 4950,51 missing

7 07 Beams lost.
7 15 Restart 900 hrs. field (current) measurement on PETRA magnets.

7 45 Restart now ca 12⁰⁰ hrs !!

8:00 Kuhlen and Bowdery on shift

9 35 Gas check done. Magnet is at 500A.
12:30 "Restart ca 15⁰⁰"
13:30 "Restart as soon as possible" (??)

16⁰⁰ Magnet off
16⁰⁰ Narvaez and Nicolaisen on shift.
16²⁰ gas check done.
16³⁰ "Restart ca 21-00 h"
20.40 Injection after repair of a short in one bending magnet coil.

22.15 Petra back on, turn on magnet.
ID has hv input fault.

18³⁰ MI-Crate-Controller swapping action.
In Crate # 7 Branch 6 (Rack 13 top)
Removed: Yorway 70A Ser. 423. II. Instit. 3807
Inserted: Yorway " Ser. 359 DESY 25-7724
This is a new controller, found near the 2nd NORD, GL-connector adapted to our standards
Kuhlen

Bethke came to adjust threshold of HV-input.
Try to start run.
Somehow everytime we want to start run, the green lamp which signals a HV trip starts flashing. But no HV is off.
Use any test Run it works.
Z-chamber voltage was down – all works ok after HT switched on
Muon Crate 14 goes off all the time. Resetting just helps for a few seconds.

Fried Ian Olsson, now we can also start with T1. The earlier fault was probably due to the z-chambre being off. Then after the pedestal events it is not possible to stop a run. This is why computer had to be reloaded every time.

16/08/85 0⁰⁰ Kawagoe + Hagemann
0 12 Gas check done.
1 58 Muon crate 14 missing, reset in hardware room not possible, reset at crate 14 o.k.
2 06 " " 2^{18} " 2^{24} " 2^{34} "
2 07
2 14 PKR tries to optimize background to reduce dead time and improve luminosity.
4 40 Since R22333 we have got messages " MISSING TCC IN TRIGGER BOX" at Run start. Seems to have been a fake error, But all histograms seem OK. after building test print into program, the
4 55 ID. HV trip. error disappeared!
5 15 MUON CRATE 14 missing. Reset impossible.

8⁰⁰ 16/8/85 Elsen + Zorn
8 40 (Again) system stopped but Pause + Continue returned it to operation; ~~Sat~~
8 50 Gas check done
9⁰⁰ "Switch of HV". Tasso requests short access.
12 13 Test version of readout, with auto switch of z-chamber installed. Now wait for trips! .... J.O.
at 13⁰⁰, interlock will be broken, to close a lead-door which is forgotten in open state, this says "Strahlenschutz".
12⁵⁰ μ-crate 14 problem cured by J.Carr & P. Warming. All chambers connected again.
12 35 Investigation of HV problem for ID (top of page) shows that the proper voltage is put on the chamber, however the reference voltage used in the threshold comparison is too low. Upper and lower threshold readjusted for new.
12 45 A false z-chamber trip still interrupts data taking. Informed Jan. Added another change, now it should work! J.O.

166 RUN	DATE	START	STOP	at run start I^+	at run start I^-	TIME [sec]	RECORDS IN	RECORDS OUT	ALL $\times 10^6$	$T\Phi_{rec}$ $\times 10^6$	$T1_{acc}$ SUM	$T2_{acc}$ SUM	T1 Bit2 $E_{cal} > 6$ GeV	T2 Bit 17 2T · E_{cal} 2TR	DEAD TIME [%] (~ sorry ~ accidental bin
22324	~~14~~/8/85	5.06	7.07	5·12	5·77	2614	7227	8749	680	228	3364	5387	1222	30	33.5
22325→27															
22328	15/8/85	22·53	23·30	4·71	5·12	2209	5762	2653	575	108	2812	4090	932	15	18·9
22329	"	23·31	23·50	4·32	4·70	1145	2978	1395	298	57	1480	2063	498	9	19·1
22330	"	23 52	0 18	4.11	4.48	1026	2687	1225	267	39	1406	1828	466	4	14.8
22331	16/8/85	0 54	1 20	6.39	6.14	1359	3790	1885	354	117	1723	2563	572	7	33.0
22332	"	2 01	2 49	6.14	6.16	2910	8001	4038	757	255	3823	5504	1260	31	33.7
22333	"	2 50	3 39	5.35	5.35	2917	8002	4023	759	171	4067	5494	1419	24	22.6
22334	"	3 39	4 30	4.67	4.60	3049	8002	3718	793	145	4223	5368	1420	22	18.3
22335	"	4 31	4 54	4.09	~~4.75~~ 3.75	1356	3453	1607	352	57	1888	2297	622	12	16.1
22336	"	5 16	6 10	3.68	3.53	2908	6789	2885	757	100	3882	4755	1284	17	13.2
22337	"	6 29	7 26	6.34	6.43	2843	8002	3968	738	243	3723	5333	1284	24	32.9
22338	"	7.27	8:16	5·46	5.19	2915	8002	3914	758	179	4053	5447	1457	20	23.7
22 339	"	8:17	9:04	4.77	4.50	2803	7343	3378	729	156	3866	4955	1340	22	20.6
22340	"	10.46	11:06	4.68	4.42	970	2443	1126	252	35	1368	1532	447	7	13.9
22341	"	11:15	11:30	4.36	4.15	833	2054	898	216	39	1103	1354	363	6	18.3
22342	"	11:32	11:45	4.21	3.99	729	1864	804	189	28	1054	1222	344	0	15.1
22 343	"	12:15	13:02	3.72	3.53	2293	5214	2310	597	94	2992	3644	995	10	15.8
22344	"	18:40	19:24	6.16	6.16	2604	8002	4146	677	130	3709	5626	1169	27	19.2
22345	"	19:24	20:14	5.48	5.45	2949	8002	4154	768	210	3879	5708	1262	27	27.9
22346	"	20:14	21.08	4.82	4.77	3024	8002	4068	787	186	4037	5713	1359	39	23.7
22347	"	21:08	22:01	4.21	4.12	3094	8002	3803	805	163	4190	5912	1391	27	20.2
22348	"	22:01	22:34	3.73	3.62	1811	4602	2116	472	74	2606	3304	797	15	15.7
22349	"	23:05	23:56	6.08	5.97	2902	8001	4094	755	260	3597	5458	1166	23	34.4
22350	"	23:56	0:33	5.24	5.09	2134	5750	2814	555	155	2788	3828	919	17	280
22351	17/8/85	0:42	0.59	4·66	4·52	1022	2858	1351	266	53	1459	1899	474	9	200
22352	"	1·28	2:19	5·96	5.95	2909	8002	4109	757	248	3676	5403	1209	28	329
22353	"	2:20	3:09	5·16	5·07	2927	8002	3819	761	188	4043	5409	1327	24	24.7
22354	"	3:09	3:26	4·55	4·45	1005	2742	1278	261	48	1431	1835	456	6	187
22355	"	3·30	4:05	4.32	4.21	2077	5467	2441	540	91	2958	3550	871	77	16.8
22356	17/8/85	10:08	10:25	5·72	5·71	397	1737	614	103	29	539	820	157	17	27.8
22357	"	10:44	11:35	6.21	6.18	2897	8002	4062	754	182	3934	5539	1251	22	24.1
22358	"	11·35	12:14	5,43	5,37	2284	6143	3063	594	121	3157	4234	1037	17	20.5
22 360	"	13 17	14:07	5,90	5,89	2941	8001	4171	765	247	3838	5594	1203	34	32,3

PROCESSORS ON/OFF N50	MIP	TOF	FTOF	<L> 10^{30} cm^{-2}s^{-1}	Bhabha $\int L\,dt$ [nb^{-1}]	$\int L\,dt$ Exp. Energy	IBM/TAPE OUTPUT	At Run Start ID [kA]	At Run Start TOF [V]	ONLINE REJ SUM MIPROC T2 %	ONLINE REJ NORD-50 T1&T2 %	Σ_{Bhabha}	MH	E_{Beam}	Mag. field ~7 kGauss	167 Remarks
ON	ON	ON	ON	2·19	5·74	11807·44	"	1·4	1.5	46	51	65	0	21.800	4844	Beam lost.
																sink
"	"	"	"	2·13	3·36	11810·80	IBM	1·2	0.75	42	57	38	0	21·800	4856	
"	"	"	"	1·88	1·77	11812.57	"	?	?	44	57	20	0	21·802	4837	"no trigger" ⇒ start new run.
"	"	"	"	1,62	1,06	11813.63	"	1·1	0·65	42	57	12	0	21,800	4838	Beam Dumped.
"	"	"	"	2·86	3.00	11816.63	"	1.6	1.2	39	54	34	2	21.800	4840	Beam gradually lost ⇒ dumped
"	"	"	"	2·81	7.07	11823.70	"	1.6	1.2	38	53	80	4	21,802	4838	
"	"	"	"	3,37	9.45	11833.15	"	?	?	43	53	107	1	21.800	"	
"	"	"	"	2·53	8,04	11841.19	"	1,2	0,8	44	56	91	4	21,802	"	
"	"	"	"	2.18	2.30	11843.49	"	1,0	0,6	~~44~~ 45	~~56~~ 57	26	0	21.800	"	Stop due to ID HV problem
"	"	"	"	1.61	4.42	11847.91	"	0.9	0.5	48	60	50	0	21.802	"	beams dumped
"	"	"	"	3.51	10.60	11858.51	"	1,6	1,5	38	53	120	3	21.800	4837	
"	"	"	"	2.96	8,22	11866.73	"	1.4	0.9	42	54	93	2	21.802	4838	
"	"	"	"	2.45	4.86	11871.59	"	1.2	0.78	43	57	55	1	21.800	4838	dumped
"	"	"	OFF	3,03	2.65	11874.24	"	~~1.7~~ 1.6	0.6	43	57	30	0	21.800	4840	
"	"	"	ON	2.30	1.77	11876.01	"	1.0	0.52	45	59	20	0	21.802	4840	
"	"	"	"	2,33	2.03	11878.04	"	?	0.55	44	60	23	0	21.800	4841	
"	"	"	"	1.46	2.83	11880.87	"	0.9	0.52	49	58	32	2	21.800	4841	Beam loss
"	"	"	OFF	3.96	11.66	11892.53	"	1.4	1.2	40	51	132	1	21.800	4838	
"	"	"	ON	2.79	8.04	11900.57	"	1.2	1.0	43	51	91	4	21.800	4838	
"	"	"	ON	2,40	5.83	11906.40	"	1.2	1.2	44	52	66	2	21.800	4838	
"	"	"	"	1.78	6.27	11912.67	"	1.1	1.2	49	55	71	2	21.800	4838	
"	"	"	"	1.80	3.71	11916.38	"	1.0	1.0	48	59	42	2	21.800	4838	
"	"	"	"	3.14	7.51	11923.89	"	1.6	1.7	38	52	85	3	21.800	4838	
"	"	"	"	2·80	5·12	11929·01	"	1.5	0.9	38	55	58	1	21.800	4841	Run stopped because of IBM link crash
"	"	"	"	2·79	2·30	11931·31	JDAS02 TAPE	1·3	0·75	39	56	26	1	21·800	4840	Beams lost (Tape writer)
"	"	"	"	3·20	8·04	11939·35	IBM	1·7	1·4	39	51	91	2	21·800	4839	
"	"	"	"	2·83	9·45	11948·80	"	1·4	0·8	41	55	107	5	21·802	4837	5 good MH events in this run
"	"	"	"	2·66	2·21	11951·01	"	1·3	0.65	41	56	25	0	21·802	4837	Run stopped because of IBM crash
"	"	"	"	2.27	3.53	11954.54	JDAS04	1·2	0·6	41	58	40	1	21.802	4838	beams lost
on	on	on	on	3.89	1.54	11956.18	IBM	1.5	1,2	37	48	18	3	21.800	4842	beams lost
on	on	on	on	~6.0	~12	11968.0	IBM	1·5	0.9	39	51	143	22	21.800	4843	
"	"	"	"	3,40	7,86	11975,86	"	1,3	0,8	41	53	84	2	"	4844	Run lost
"	"	"	"	3,39	9,14	11985,05	"	1,6	1,0	41	50	94	4	"	"	Run #22359 ⇒ Next bunch up just after predicted crossing ??

15[40] Nagaoka & Seidel break interlock to close lead door.
Call K-people to reset magnet overload alarm.
PETRA has vacuum problems! So → K.U.

16[00] Marshall & Matsumura on shift

18 00 Gas Check done
19 00 Beam pipe chamber Trip
20 45 z chamber trip

17/8/85
0:00 Kuhlen and Boudary on shift
1:48 z chamber trip. Run had to be paused because triggering ceased.
7:00 no beams for three hours. LINAC II is in trouble. They hope to restart in about one hour.

8:00 Hellenbrand - Chrin on shift. Gascheck done
magnet to 500 Amps
9:15 magnet to 7500 Amps
10:44 RUN 22357 started xxx PETRA connection xxx off
Tagging MFR 61 HV=0, Reset ok., first 1000 events affected

13:10 Run # 22359. Nord hanging after pedestals read. Re-boot okay.
16:00 Warning/Olsson. Gascheck done
histograms checked, they look all normal
small bug in ZDAS corrected. The z-chamber trip auto-continue should now work! J.O.
z-chamber tone trip. Datataking continues, as prescribed, to programmers joy!

Concerning High Dead Time: It has been observed that it is connected with the vertexchamber, since deadtime is drastically reduced when VTX ch. trips and it is removed from readout. On the other hand, it is proven that the VTX processors are not causing deadtime, Nord 10 waits only 1-2 msec for the first processor to be ready. After talking with Howard Hicks, the likely explanation is the following: The events have to go through a buffer in real time common, in order to be processed by NSO. This buffer has 8K size, big enough to hold several normal events. However, if there is excessive vtx chamber data, the events are unusually large and there is a queuing for space in the 8K buffer. The hard proof for this hypothesis will be given by HEM next week. If this is true, only remedies are: Run without NSO analysis, or make coordinates out of the vtx ch. data already in the VTX processors, in order to shrink event size... J.O.

18/8/85
0:00 Kleinwort, Spitzer
0:30 Gas check done
1:20 z-CH tripped alone
3:06 News from TASSO: LINAC I out of order, no new beams this night!
4:50 Beam lost. Run magnet down to 500 amps
6:20 Injection, run magnet up

8[00] Marshall & Kuhlicke on shift.
HV of TOF 1 was down. Could not be reset by "RESET-HV"; HV-Cable of TOF 1 was plugged into Channel 31 of same mainframe, which was manually set to 2800 Volts. An obstinate HV-Error-Message is the effect!
" Muon Gate 5 missing" now and then, but resetting itself

11[00] Personal visit to IBM. "All down! No forecasts" or so in unfriendly language. So we write on tape
11[50] IBM evidently up again, but message on PETRA TV is still EXP DOWN. We take a short run (with beam dump pending) on IBM
14[05] ZDAS ERR Miss LAM 2/4 TOF Counters
14[39] " " MP: Analysis incomplete
14[48] " " " " "

Before Run 22389 the FAMP was turned on by mistake. During the run, the FAMP was loaded. FAMP Errors appeared on the ZDAS console.

16[00] Kuhlen, Skard on shift.
16:15 Gas check done
17:07 Nord hang up Level 9, reloaded
20:00 z-chamber trip. Data taking continued. Good job, programmers!!
22:40 — " —

19/8/85 Bethke & Hagemann on shift
0:00
0:12 Gas check done
3:30 "Silent breath". Problems with e⁻-injection. magnet → 4000 A
6:30 restart before 800 seems to be unlikely. PKR expects at 7[00] a "specialist", who will probably also need one hour to find and fix the problem (magnet fault in the injection system). Hagemann goes home.

RUN	DATE	START	STOP	AT RUN START I^+	AT RUN START I^-	DEAD TIME [%]	TIME [sec]	RECORDS IN	RECORDS OUT	ALL $\times 10^6$	T0 REJ. $\times 10^6$	T_1 ACC SUM	T_2 ACC SUM	T_1 BIT 2 $E_{tot} > 6$ GEV	T_2 BIT 17 $2T \cdot E_\perp > 2$ TR
22361	17/8/85	14:07	14:58	5.15	5.13	25.7	2940	8002	3943	765	197	3932	5680	1274	16
22362	"	14:58	15:51	4.57	4.49	17.2	3122	8002	3704	812	139	4326	5475	1426	28
22363	"	15:52	16:46	3.95	3.94	14.3	3270	8002	3549	851	112	4537	5423	1401	28
22364	"	16:51	17:23	3.44	3.45	13.3	1910	4503	1905	497	66	2619	3035	818	14
22365	"	17:50	18:38	6.19	6.00	28.7	2839	8002	3923	739	212	3861	5856	1944	37
22366	"	18:38	18:45	5.38	5.23	27.4	403	1101	513	105	29	545	729	178	3
22367	"	20:21	21:09	6.07	6.00	26.1	2889	8002	3872	752	196	3698	5416	1151	31
22368	"	21:09	22:02	5.33	5.27	22.1	2970	8002	3806	773	171	4024	5404	1280	21
22369	"	22:03	22:54	4.66	4.60	18.2	3087	8002	3688	803	146	4347	5309	1437	17
22370	"	22:55	23:22	4.11	4.06	15.2	1603	3937	1799	417	63	2218	2558	736	9
22371	"	23:50	0:01	6.13	6.08	21.0	639	2073	985	166	35	899	1433	254	6
22372	18/8/85	0:01	0:49	5.93	5.86	29.3	2855	8002	3978	742	217	3923	5373	1265	25
22373	"	0:49	1:37	5.20	5.14	22.1	2863	8002	3713	745	165	4073	5359	1293	21
22374	"	1:38	2:29	4.60	4.55	17.3	3067	8002	3606	798	138	4243	5339	1417	13
22375	"	2:30	3:24	4.07	4.02	14.0	3231	8002	3770	841	118	4615	5260	1465	20
22376	"	3:24	3:51	3.61	3.57	15.5	1393	3392	1467	362	56	1954	2220	618	13
22377	"	9:43	7:52	5.86	5.86	20.5	520	1524	760	135	27	730	1080	183	3
22378	"	7:53	8:45	5.70	5.70	25.8	3069	8002	3919	798	206	3887	5492	1767	19
22379	"	8:46	9:37	4.95	4.93	18.9	3039	8002	3749	790	149	4129	5356	1203	22
22380	"	9:38	10:31	4.36	4.33	15.8	3131	8001	3517	815	129	4305	5365	1392	25
22381	"	10:31	10:47	3.86	3.83	14.9	904	2188	983	235	35	1896	1457	348	7
22384	"	10:57	11:55	3.67	3.64	14.5	3461	8002	3445	901	131	4541	5451	1476	17
22385	"	12.00	12.03	3.21	3.18	12.8	127	369	166	33	4	95	238	62	1
~~22386~~	"	12.28	13.05	5.74	6.10	22.7	2150	6951	3398	559	127	3852	4587	1034	21
22387	"	13.31	14.14	6.32	5.01	20.7	2536	8002	3935	660	137	3610	5417	1170	26
22388	"	14.14	14.59	5.68	4.38	18.1	2652	8001	3684	690	125	3914	5281	1318 ~~3314~~	21
22389	"	15.00	15.47	5.09	3.86	16.5	2788	7271	3232	725	120	3968	4842	1305	15
22390	"	15.48	16.41	4.56	3.42	13.9	3170	8001	3502	824	114	4500	5318	1442	16
22391	"	16.43	16.45	4.06	3.02	15.9	121	358	154	31	5	198	213	66	0
~~22392~~	"	17.07													
22393	"	17.14	18.02	5.26	5.26	26.2	2842	8002	3813	739	184	3961	5346	1310	28
22394	"	18.02	18.51	5.23	5.22	22.1	2895	8002	3805	753	166	4145	5304	1369	19
22395	"	18.51	19.43	4.61	4.59	16.5	3048	8002	3611	793	131	4493	5279	1419	22
22396	"	19.43	20.38	4.06	4.04	14.6	3247	8002	3518	844	123	4614	5379	1539	22
22397	"	20.38	21.33	3.59	3.58	13.4	3243	7635	3213	844	113	4581	5013	1505	24

Processors 1/50	Processors MIP	ON/OFF TOF	ON/OFF FAMP	$\langle L \rangle$ 10^{30} cm^{-2}s^{-1}	BHABHA $\int L dt$ [nb^{-1}]	$\int L dt$ EXP. ENERGY	IBM/TAPE OUTPUT	At Run Start ID [μA]	At Run Start TOF [V]	ONLINE REJ. SUM MIPREC T_2 [%]	ONLINE REJ. NORD-50 $T_1 \& T_2$ [%]	$\sum_{BHABHA}$	MH	E_{beam}	Mag. Field −1×Gauss	REMARKS
ON	ON	ON	ON	2.87	6.89	11991.94	IBM	1.4	1.0	41	53	78	3	21.800	4845	
"	"	"	"	2.58	8.92	12000.86	"	1.2	0.7	43	56	101	2	21.802	4846	
"	"	"	"	1.94	4.95	12005.81	"	1.1	0.6	46	58	56	1	"	4847	
"	"	"	"	1.78	3.09	12008.90	"	0.9	0.5	47	60	35	0	"	4846	
"	"	"	"	3.84	12.19	12021.09	"	1.65	1.0	37	54	138	2	"	-4847	
"	"	"	"	3.50	1.06	12022.15	"			38	57	19	0	"	-4845	beam loss, all trip-rl.
"	"	"	"	3.76	10.34	12032.49	"	1.5	1.2	36	54	117	4	"	-4841	
"	"	"	"	3.08	7.25	12039.74	"	1.45	0.7	40	55	82	5	"	-4842	
"	"	"	"	2.28	7.78	12047.52	"	1.2	0.65	43	57	88	4	"	-4844	
"	"	"	"	1.99	3.62	12051.14	"	?	?	44	57	41	0	21.800	4840	
"	"	"	OFF	4.25	2.12	12053.26	"	1.65	1.05	35	55	24	0	21.802	4840	stopped to switch FAMP on
"	"	"	ON	3.24	8.04	12061.30	"	1.65	1.1	37	53	91	0	"	4841	
"	"	"	"	2.83	6.98	12068.28	"	1.4	1.0	40	57	79	2	"	4840	
"	"	"	"	2.34	7.86	12076.14	"	1.3	0.7	41	58	89	2	"	4839	
"	"	"	"	1.84	6.80	12082.94	"	1.1	0.6	46	59	77	1	"	4840	
"	"	"	"	1.58	1.86	12084.80	"	1.0	0.5	45	60	21	0	"	4840	beam lost
"	"	"	"	4.52	1.86	12086.66	"	1.5	0.9	34	52	21	0	"	4837	VTX-DATA -TURN stopped due to VTC problem
"	"	"	"	3.46	9.45	12096.07	"	1.5	0.8	39	54	107	4	21.800	4837	
"	"	"	"	2.69	8.13	12104.14	"	1.4	0.7	40	56	92	0	"	4837	
"	"	"	"	2.15	5.21	12109.35	"	1.2	0.6	42	57	59	3	"	4837	
"	"	"	"	1.78	1.94	12111.29	"	1.1	0.5	43	58	22	0	"	4837	run ended with IBM fault/crash was 22382-3 dont exist written & tape, no IBM
"	"	"	"	1.49	4.86	12116.15	DDA595	1.0	0.5	46	60	55	2	21.802	4837	
"	"	"	"	0.88	0.27	12116.42	IBM	0.7	0.4	36	60	3	0	21.800	4839	restarted on IBM just before beams dumped
"	"	"	"	3.59	7.86	12124.28	IBM	1.8	1.2	34	54	87	1	21.800	4838	beams lost; general trip
"	"	"	OFF	3.32	8.92	12133.20	"	1.65	1.1	36	54	101	1	21.80	4838	
"	"	"	~~OFF~~	2.66	7.95	12141.15	"	1.55	0.8	37	57	90	3	21.800	4838	Famp was but most likely doing nonsense. See Page 169
"	"	"	~~OFF~~	7.92	6.01	12147.16	"	1.25	0.65	43	58	68	1	21.800	4839	
"	"	"	OFF	1.70	5.30	12152.46	"	1.1	0.55	44	59	60	0	21.800	4837	
"	"	"	ON	1.57	0.18	12152.64	"	1.0	0.53	37	61	2	0	21.802	4837	beams dumped
																junk
"	"	"	ON	3.23	9.37	12153.01	IBM	1.6	1.0	39	55	106	0	21.802	4837	
"	"	"	"	2.72	7.16	12160.17	"	1.4	0.8	41	55	81	4	21.802	4838	
"	"	"	"	2.30	5.57	12165.74	"	1.2	0.7	44	57	63	4	21.802	4838	
"	"	"	"	1.68	5.83	12171.57	"	1.0	0.65	46	59	66	1	21.802	4837	
"	"	"	"	1.35	4.42	12175.99	"	?	?	48	60	50	0	21.802	4838	beams dumped

RUN	DATE	START	STOP	AT RUN START I^+	AT RUN START I^-	DEAD TIME (%)	TIME [sec]	RECORDS IN	RECORDS OUT	ALL $*10^6$	TØ REJ $*10^6$	T_1 ACC SUM	T_2 ACC SUM	T_1 BIT 2 $E_{LG}>6GeV$	T_2 BIT 17 $2T\cdot E_\mu \geq 2TR$
22398	18.8.85	21:58	22:47	6.15	6.07	29.7	2880	8002	4041	749	223	3897	5295	1300	22
22399	"	22:47	23:36	5.37	5.31	22.2	2922	8002	3886	760	169	4258	5246	1439	26
22400	"	23:36	0:27	4.71	4.67	17.8	2999	8001	3644	780	139	4468	5377	1446	17
22401	19/8/85	0:27	1:21	4.15	4.12	15.4	3229	8001	3607	840	129	4577	5366	1557	29
22402	"	1:21	2:14	3.66	3.65	13.5	3112	7333	3152	810	110	4447	4763	1446	17
22403	"	9:27	10:18	5.74	5.61	20	3038	8002	3910	791	159	3766	5627	1117	25
22404	"	10:19	11:16	5.01	4.94	16.8	3239	8002	3745	843	141	4336	5384	1310	26
22405	"	11:19								Sunty BPCH data in this run					
22406	"	11:23	11:40	2.50	2.84	10.4	984	1939	736	256	26	1229	1304	391	1
22407	19/8/85	23:12	0:02	5.70	5.74	26.7	2959	8002	3828	767	205	3583	5959	1123	32
22408	20/8/85	0:02	0:56	5.02	5.09	21.1	3000	8001	3758	781	165	3933	5556	1273	16
22409	"	0:56	1:50	4.42	4.50	16.5	3191	8002	3520	830	137	4179	5596	1352	21
22410	"	1:51	2:46	3.91	3.99	14.2	3335	8002	3410	868	123	4448	5381	1427	26
22411	"	2:55	3:28	3.41	3.49	12.3	1956	4596	1860	509	63	2661	3094	781	6
22412	"	3:53	4:42	6.11	6.08	28.9	2844	8002	3860	740	214	3843	5304	1324	15
22413	"	4:43	5:32	5.38	5.35	22.2	2925	8002	3801	761	169	4169	5315	1405	16
22414	"	5.33	6.24	4.74	4.72	16.8	3046	8002	3702	793	133	4340	5511	1465	24
22415	"	6.24	7.17	4.20	4.19	15.3	3152	8001	3482	820	126	4642	5269	1582	31
22416	"	8:17	8:58	5.80	5.83	27.3	2812	8002	3726	732	201	3943	5273	1358	21
22417	"	8:58	9.50	5.11	5.12		2415	6669	3044	629.2	140.3	3470	4469		
22418	"	9:56	10:47	4.43	4.44	17.3	3058	8002	3651	797	137	4845	5289	1581	18
22419	"	10:48	11:08	3.93	3.95	13.6	1173	2896	1209	306	41	1742	1932	595	6
22420	"	16:08	16:51	5.80	5.73	16.7	2890	8002	3844	752	126	3956	5698	1981	24
22421	"	16:54	17:45	5.04	5.23	16.2	3026	8001	3750	787	127	4300	5481	1399	22
22422	"	17:45	17:46	4.34	4.53			77	42						
22423	"	17:47	18:40	4.32	4.51	12.7	3197	8002	3560	832	105	4628	5362	1485	19
22424	"	18.41	19.02	3.77	3.95	12.5	1239	2994	1331	322	40	1773	1973	612	8
22425	"	19.03	19.36	3.58	3.76	11.8	1939	4503	1843	505	60	2690	2950	852	8
22426	"	20.05	20.14	6.32	6.46	20.1	511	1379	590	133	27	612	988	210	5
22427	"	20.15	21.01	6.04	6.36	23.6	2748	8002	3838	715	169	4086	5180	1355	19
22428	"	21.01	21.50	5.28	5.59	19.9	2889	8002	3891	752	149	4298	5395	1454	32
22429	"	21.50	22.42	4.60	4.83	14.2	3103	8002	3595	807	114	4650	5352	1608	18
22430	"	22.42	23.34	4.03	4.24	12.4	3069	7401	3147	799	99	4422	4848	1425	14

continue on p.176

150	MIP	TOF	FAMP	<L> $10^{30}\,cm^{-2}s^{-1}$	BHABHA $\int L\,dt$ $[nb^{-1}]$	$\int L\,dt$ EXP. ENERGY	IBM/TAPE OUTPUT	AT RUN START ID $[\mu A]$	AT RUN START TOF [V]	ONLINE REJ SUM MPROC T_2 %	ONLINE REJ NORD-50 T_1RT_2 %	Σ_{BHABHA}	MH	E_{BEAM}	MAG. FIELD $\cdot 1\,kGAUSS$	REMARKS
ON	ON	ON	ON	3.18	8.66	12184.65	IBM	1.6	1.0	38	53	98	0	21.800	4838	
"	"	"	"	2.84	8.22	12192.87	"	1.4	0.9	42	54	93	3	21.802	4838	
"	"	"	"	2.30	7.16	12200.03	"	1.2	0.7	44	57	81	4	21.802	4837	
"	"	"	"	1.76	6.01	12206.04	"	1.0	0.6	45	57	68	1	21.800	4838	
"	"	"	"	1.37	3.53	12209.57	"	0.9	0.5	48	59	40	3	21.800	4838	beams dumped
"	"	"	"	3.18	8.48	12218.05	"	1.5	1.0	89	54	96	1	21.802	4847	
"	"	"	"	3.03	10.34	12229.39	"	1.3	0.7	43	56	117	2	"	4847	
								0.9	0.25						4840	new FAMP processor program
"	"	"	"	0.85	2.12	12230.51		0.9	0.25	52	65	24	1	"	"	beams dumped
on	on	on	on	2.68	8.13	12238.64	IBM	1.8	1.8	40	55	92	3	21.800	4853	
"	"	"	"	2.49	5.74	12244.38	"	1.4	0.8	40	56	65	1	"	4854	
"	"	"	"	2.16	5.21	12249.59	"	1.2	0.7	42	59	59	2	"	4853	
"	"	"	"	1.95	6.18	12255.77	"	1.1	0.5	44	60	70	2	"	4850	
"	"	"	"	1.56	2.65	12258.42	"	1.0	0.4	47	62	30	0	"	4850	
"	"	"	"	3.28	9.90	12268.30	"	1.6	1.0	38%	55	112	3	"	4850	
"	"	"	"	2.72	6.98	12275.28	"	1.4	0.8	42	55	79	5	"	4853	
"	"	"	"	2.34	5.65	12280.93	"	1.2	0.6	44	56	64	1	21.802	"	
"	"	"	"	1.91	6.18	12287.11	"	1.1	0.6	46	59	70	0	21.800	4852	Beams Dumped
"	"	"	"	3.19	7.51	12294.62	"	1.55	1.25	37	54	95	2	"	4845	
"	"	"	"	?	?		"	1.4	0.7							No Run Summ avail
"	"	"	"	1.98	6.18	12300.80	"		0.7	46	57	70	3	21802	4846	
"	"	"	"	1.92	2.21	12303.01	"	0.9	0.5	48	61	25	0	21.800	4847	Beams dumped
"	"	"	"	3,56	8,22	12311,23	"	1.5	0.8	40	55	93	3	"	"	New VTRC-Licence program
"	"	"	"	3,37	8,48	12319,71	"	1.2	0,6	43	56	96	3	"	4847	
"	"	"	"		0.00	12319,71	"	1.1	0,5			0	0	"	"	
"	"	"	OFF	2,66	8,75	12328,46	"	1,1	0,5	46	58	99	2	"	"	
"	"	"	ON	2,23	2,39	12330,85	"	0,95	0,45	47	58	27	2	"	-4846	aborded by N50 crash.
"	"	"	"	2,06	4,06	12334,91	"	0,9	0,4	46	61	46	0	"	-4847	Beams dumped.
"	"	"	"	0,84	0,27	12335,18	"	1,45	0,85	37	61	3	0	"	"	Beams did not collide!
"	"	"	"	4,13	11,48	12346,66	"	1,5	"	38	55	130	3	"	"	
"	"	"	"	3,44	8,92	12355,58	"	~1.8	~0,70	43	54	101	2	"	"	
"	"	"	"	3,05	9,01	12364,59	"	1,0	0.55	46	57	102	0	"	-4846	
"	"	"	"	2,55	7,07	12371,66	"	0,9	0,45	47	60	80	1	"	-4845	Beams dumped

Monday 19th August 8:00 G. Heinzelmann + H. Mills on shift

9:00 Gas check done. Injection starting. Magnet ⇒ 7500A 9:25 New fill ready

10:36 IBM link went busy for several minutes - rang Herr Delks (F58) who went to look at equipment - suddenly it all sprang into life again. He claims he did not touch anything - said it was in a "funny state".

11:00 BP-CH trip.
11:15 Soft trip just after run ends. (22404)
18:50 RF problems - restart ~1800! Magnet ⇒ very low

16:00 Hellebrandt/Mnich on shift
17:00 restart at about 20:00 → 23:00
22:45 magnet raised to 7500 Amps while injection started
23:15 MFR 53 Chan. 0 HV trip ~~reset by program did not help~~
23:20 vertex chamber alarms — valve failure — PC5 green button on, Reset o.k.
VVOLTS: TOF - MFR53 CHANNEL 31 ← RESET via Detector control o.k.
+ CHANNEL 0 ← —"— —"— not o.k. 2 times
Reseted by hand

20.08.85
0:00 Knies and Kawagoe on shift.
0:15 Gas Check OK.
0:30 ~ YSPY error TRIGGER 1 INPUT MISSING 24, 32 (C OUTPUT.
followed by TOF TDC NO HITS 0 & TRI. OUTPUT MISSING 32
1:15 TOF Channel 0 in MFR53 the HV supply is replaced by channel 31; channel 31 is on 2800 Volt now, we will therefore receive error messages for HV on TOF ch. 0, and TOF ch 31 which the computer expects on 2100 Volts; HV on channel 31 was set manually to 2800V.
The previous shift crew should not have reset it via Detector control, which led to 2100 V.
8:00 Matsumura & Krebbiel on Shift
8:10 After when the new fill was ready, background was high. Optimisation on request brought TOF rate down to 1.2
8:15 Gas check done
9:30 JDAS Err. 33 Miss LAM br 2 cr 4 to F2 cntrs
9:25 Naroska comes to set the TOF MFR. 53 in order. Run 22417 paused after 9544 N10-events
9:40 IBM down. Run stopped. No run entry of run 22417 available
9:52 all up again

10:20 IBM stop-and-go-traffic.
10:37 Magnet fluctuations 7500 → 7508. Re-Set.
TOF rate went up from 0.7 to 0.8. Complaining brought it down to 0.5
10:55 Coordinator suggest a new fill at 11:05. Tasso has low Lumi.
11:08 Serious Error Printout at System Console 2x Disc-Drum Transfer Error Happened during FAMP Load
As a precaution restarted Nord computer.
12:40 PETRA says: Unterbrechung Wiederanlauf 13.30. Magnet run down to 100 A;
13:00 Magnet 7500 A
16:00 Laurikainen / Olsson
16:08 Vtx ch soft. trip
18:57 NSO crash, memory out of range, Run aborted. Start next run OK, after exit and restart TDAS
20:05 New fill started, with nice beams. But no Lumi! Tagging HV is on [Phone Rank], they have the same problem, will complain at PKR ---. Then very soon, Lumi starts to accumulate.
"LG > 250 blocks" events are quite frequent.
19:30 : Change to Run Start program YPARA/YPAROT: Famp status is checked at Run Start; if not OK, then error YPARA 71 appears and then FAMP is automatically switched OFF. YSPY saw it!
23:00 : TOF 60 is dead. After consulting with Bruce and pulling some cables in and out, it works again!
23:40 : We collected 68.6 nb^{-1} on this shift; If all shifts were as good, we would get 200 nb^{-1}/day!

21/8/85 00:00 Kleinwort & Chin on shift.
5:05 VTX and ID - Sektion (Tofrate) went after Run 22437 stopped (1 m.t et Ref)
7:12 Missing Lam: BR 2 CR 3 : TOF 1
7:50 good condition this shift, 77.2 nb^{-1} collected

8:00 : Hedgecock + Febt on shift
GAS CHECK COMPLETED
9:50 "Switch on high voltage" — but our magnet has just tripped off (Vordruck pinnen and Durchfluss — ie. cooling water disconnected?). Inform MKK.
10:00 MAGNET ISOLATOR OFF — THERE APPEARS TO BE A LARGE PIPE BREAKAGE. AS YET NOT DEFINED WHERE?
10:08 SHORT BREAK COMES ON TO SCREEN?
A "Bagger" ® damaged a main water pipe ® the "Vertical-Iron-Bar-Pull-Out-Hydraulics"

12:30 Remark from Trg meeting at "HERA-Busstelle":
PETRA will be switched off at least till 22/8 evening because of the power line
JADE probably 1-2 days longer because of the water pipe

Run	Date	Start	Stop	At Run Start I+	At Run Start I−	Dead Time %	Time (sec)	Records In	Records Out	All ×10⁶	TØ Rej ×10⁶	T1 Acc Sum	T2 Acc Sum	T1 Bit Eth >6GeV	T2 Bit 2T·Eth ≥ 2T·
22431	21/8/15	00:01	0:46	6,24	6,22	15.7	2649	8001	3919	689	108	4336	5121	1485	19
22432	"	0:46	1:15	5.42	5.46	15.7	1708	4939	2310	444	70	2762	3178	922	14
22433	"	1:15	2:06	5.01	5.05	15.8	3020	8002	3658	786	124	4648	5313	1599	21
22434	"	2:06	2:59	4.40	4.44	13.3	3178	8002	3423	827	110	4875	5197	1620	21
22436	"	3:03	3:50	3.84	3.89	11.7	2815	6609	2678	732	86	4129	4337	1349	11
22437	"	4:18	5:05	6.39	6.32	20.6	2803	8002	3913	729	151	4246	5286	1453	21
22438	"	5:08	5:59	4.52	5.47	14.9	3032	8002	3624	789	117	4787	5141	1659	19
22439	"	5:59	6:54	3.93	4.83	13.3	3272	8002	3479	851	113	4835	5219	1656	11
22440	"	6:54	7:50	3.44	4.27	11.7	3312	7803	3089	862	101	4420	4934	1624	21
22441	26~~8~~.8.15						no data								
22442	26.8.15	16:06	17:08	5.65	5.98	14.9	3333	8002	?	868	129	4246	5757	891	30
22443	"	17:08	17:32	3.17	4.41	7.6	~~1317~~	2086	896	343	26	1065	1596	158	2
22444	"	18:04	18:55	6.15	6.38	18.6	3053	8002	3936	794	148	3859	5766	861	31
22445	"	18:55	19:51	5.21	5.58	13.8	3293	8002	3814	857	118	4068	5538	863	36
22446	"	19:51	20:52	4.47	4.88	11.5	3633	8002	3812	946	108	4496	5680	830	24
22447	"	20:52	21:03	3.76	4.26	14.1		800	363			No Run summary			
22448	"														
22449	"	21:39	22:00	3.38	3.87	10.0	1214	2544	1102	316	32	1462	1853	285	9
22450	"	22:28	23:05	6.19	6.47	21.6	2204	6057	2971	573	123	3057	4083	713	12
22451	"	23:08	23:51	~~9.85~~	5.79	13.5	3006	8002	3941	782	106	4137	5697	1022	18
22452	"	23:59	0^{53}	4.88	5.11	12.5	3259	8002	3797	848	106	4204	5857	945	23
22453	27.8.15	0^{54}	1^{56}	4.28	4.49	10.7	3734	8002	3559	971	104	4313	6115	973	32
22454	"	1^{56}	2^{30}	3.72	3.92	11.9	1985	4089	1705	516	62	2279	3016	484	10
22455	"	2:57	3^{47}	6.40	6.36	15.4	~~3853~~ ~~3764~~	~~56~~ 8002	3920	743	114	3964	5664	1100	35
22456	"	3^{48}	4^{38}	5.64	5.61	13.6	2972	8001	3822	772	105	4092	5769	1001	29
22457	"	4^{38}	5^{34}	4.99	4.97	12.2	~~3355~~	8002	3722	867	105	4214	5735	1102	23
22458	"	5^{34}	6^{35}	4.39	4.37	11.0	3623	8002	3487	943	103	4369	5916	1128	14
22459	"	6^{35}	7:15	3.86	3.85	10.5	2343	4837	1966	610	64	2781	3545	656	15
22460	"	9:51	10:40	5.91	6.30	14.1	2950	8002	3936	768	108	4128	5437	1098	22
22461	"	10:41	10:58	5.01	5.55	17.0	965	2546	1058	251	43	1241	1704	336	13
22462	"	11^{03}	11^{58}	4.71	5.25	12.5	3264	8002	3827	850	106	4422	5636	1162	28
22463	"	11^{58}	12^{58}	4.08	4.59	11.3	3599	8002	3697	936	106	4589	5707	1095	25
22464	"	12^{59}	13^{50}	3.53	4.01	10.3	3044	6670	2962	793	8	4882	4609	1050	17
22465	"	14^{42}	15^{29}	5.67	5.93	15.3	2772	8002	4158	722	110	4322	5369	1243	26

Processors ON/OFF ASY	MIP	TOF	FAMP	⟨L⟩ 10^{30} cm⁻²s⁻¹	Bhabha SLdt nb⁻¹	S L dt Exp. Energy	IBM/Tape OUTPUT	At Run Start ID (μA)	At Run Start TOF (V)	Online Rej Sum T1 & T2 %	Online Rej N>50 T1 & T2 %	Σ Bhabha	MH	Ebeam	Magn. Field -1·Gauss	Remarks
ON	ON	ON	OFF	5.23	13.17	12384.83	IBM	1.7	1.0	40	53	149	4	21.802	4845	
"	"	"	"	3.92	6.54	12391.37	"	1.25	0.65	42	56	74	0	"	4847	stopped to switch FAMP on
"	"	"	ON	3.24	8.83	12400.20	"	1.20	0.6	46	57	100	4	21.800	4844	
"	"	"	"	2.78	8.04	12408.24	"	1.0	0.5	48	59	91	1	"	"	22435 : JUNK
"	"	"	"	2.04	4.68	12412.92	"	0.9	0.45	50	61	53	1	21.802	"	beams dumped
"	"	"	"	4.28	12.63	12425.55	"	1.4	0.8	40	53	143	2	"	"	
"	"	"	"	2.89	8.76	12434.31	"	1.3	0.6	45	57	99	5	21.815	"	
"	"	"	"	2.44	8.22	12442.53	"	1.0	0.5	47	58	93	2	21.802	4843	
"	"	"	"	1.89	6.36	12448.89	"	0.8	0.4	49	63	72	1	21.800	4844	
"	"	"	"	3.31	11.31	12460.20	"	0.7	0.62	42	57	128	6	21.800	4846	VTX : 1350V ≤ Vmin ≤ 1475V
"	"	"	"	1.96	1.68	12461.88	"	0.45	0.35	44	39	19	0	21.802	4856	beams dumped
"	"	"	"	4.65	12.10	12471.98	"	1.4	0.7	40	53	127	5	21.800	4760	
"	"	"	"	3.75	12.37	12484.35	"	1.2	0.6	44	55	140	3	"	4859	
"	"	"	"	3.00	8.22	12492.57	"	1.0	0.5	46	54	93	2	"	"	
"	"	"	"		0.80	12493.37	"	0.9	0.4					"	"	LEVEL 8 Hookup
"	"	"	"				"	0.85	0.4							"
"	"	"	"	2.04	2.65	12496.02	"	0.8	0.35	48	59	30	0	"	4860	beams dumped
"	"	"	"	4.72	11.48	12507.50	"	1.4	0.7	39	53	130	0	"	"	stopped due to FAMP-problem
"	"	"	OFF	3.99	12.63	12520.13	"	1.3	0.6	42	53	173	5	"	4859	
"	"	"	"	3.29	9.37	12529.50	"	1.2	0.5	44	55	106	0	21.802	"	
"	"	"	"	2.45	8.48	12537.98	"	1.0	0.5	47	58	96	1	21.800	"	
"	"	"	"	1.97	3.62	12541.60	"	0.8	0.4	47	60	41	1	"	"	Beams Dumped.
"	"	"	"	4.52	12.19	12553.79	"	1.5	.75	40	53	138	6	21.802	"	
"	"	"	"	3.32	9.19	12562.98	"	1.3	0.6	42	54	104	3	"	4858	
"	"	"	"	2.69	8.22	12571.20	"	1.15	0.55	44	56	93	1	"	4860	
"	"	"	"	~~2~~.09	9.54	12580.74	"	~~0.8~~ ?	~~0.4~~ ?	46	59	108	1	"	4859	
"	"	"	"	1.77	4.42	12585.16	"	0.8	0.4	49	61	50	2	"	4860	Beams Dumped.
"	"	"	"	4.55	12.01	12597.17	"	1.4	0.75	40	53	136	4	21.800	4840	
"	"	"	"	4.20	4.24	12601.41	"	1.0	0.55	33	60	48	0	"	4840	stop to investigate DLB problem
"	"	"	"	3.52	11.83	12612.34	"	0.9	0.5	46	54	135	0	"	4841	
"	"	"	"	2.72	9.36	12621.70	"	0.9	0.45	48	52	106	6	"	4840	
"	"	"	"	2.14	6.45	12628.15	"	0.8	0.40	49	58	73	0	"	4842	beams dumped
"	"	"	"	4.71	12.10	12640.25	IBM 5/6	1.2	0.7	41	50	137	3	21.802	4844	

13^{00} DL8 switched off, VV30 switched off.
V34 left on, hoping that it will never happen that air-cooling goes off and V34 stay on!?

Please call S. Bethke or E. Elsen in case of power-downs and back on again.

There is no need to be permanently in the control room
but please check at least in the beginning of your shift the gas and check again everything 4 hours later.

R. Fest

16^{00} Takeshita
~~Hellenbrand~~ & Hagemann on shift

16^{22} Gas check done. "Kreislauf" I = 9.5 mA", "Katalysator-Temperatur 160°C!"
Called Mr. Seidel, already gone home, but reached R. Hedgecock. He will come in.
J. Olsen & R. Hedgecock checked the system. All o.k.

18^{53} Got warmer in control room. So watch the temperature in hardware room! (now T = 16.5°C)

20^{00} Gas check done again.

22.8.85 0^{00} Knekbil on check Leadglass trigger switched off

4^{00} Gas and temperatures are as normal E. Elsen

8^{00} Gas OK temperature 16.6° P. Warming

12^{30} " OK " 16.8 P. Warming

23.8.85

0:00 Matsumura Mills

0:10 Gas check done

4:10 Temperature 16.8° PETRA no beam (says restart 3:30) PETRA tunnel going active. No conflagrations. H.E. Mills

8:00 " 16.7° gas check OK PETRA tunnel going still or again active, restart after 12.00 h (what day?)

10^{45} Switched on DL8's, VV30.
Wanted to start test-run for I.D., had to switch on reversal crates in br 2 and br 3.
Still error on LP: Missing TCC in trigger box. 10 MHz To-trigger in testrun, no debug possible.
So I quit and ask experts. S. Bethke
Power was off!

14^{00} Newest information from R. Fest:
Jade will not run until monday!
Our waterpipe will be repaired starting monday morning.
Until that time, only 4-hours checks are required by the shift crews.

⇒ please also look into the rucksack and check if everything looks o.k. ← S. Bethke

→ Have a look at the VTXC-Envelope Box (in the backroom) ← C.K. (ignore "pressure wrong" alarm, if 1100 mbar ≤ p ≤ 1150 mbar)

Testing the repaired water pipe a new leak showed up.
It was decided to try to get PETRA running over the weekend without JADE
and stop PETRA for the further pipe repair on monday morning.
Please continue to look after the experiment as mentioned on page 175.

R. Fest

16^{12} Gas OK A. Finch

19^{45} Switched off DL8 for safety. Temp hardware room: 17.0°. Everything ok.
Petra-injection since 1h, but no success.

4^{15} PETRA "luminosity run", temperature in hardware room 17.2°, VTXC "pressure wrong" (1111 mbar) Keller

Date	time	Name	Petra	Temp. hard w.	VTXC press	Gas check
24.8.85	8.00	Narusawa	Injection	16.6	1106	V
	12 50	Schneekloth	Lumi run, low current	15	1102	
	16:30	Hellenbrand	Lumi run	14	1103	Kreislauf only 9.5 mA Expert (P. Warming) informed Action slightly readjusted P&A
	1940	Cartwright	Lumi run	15.3	1104	
25.8.85	~~0~~ 00	FINCH	LUMI RUN	14.5	1104	~~Gas checked~~
	9 00	Bethke	Lumi Run	14.3	1106	4 parameter gas checked
	12 30	Kawagoe	Lumi Run	16.4	1107	
	16.00	Hedgecock/Olsen	Injection	16.2	1106	" "
	20.00	"	Lumi-Run	15,5	1108	
26.8.85	0:10	Heinzelmann	Lumi Run	15.3	1109	gas checked
	4:00	-"-	-"-	16.4	1109	

26/8/85

8^{00} Warming PETRA "BREAK" since 7^{00} Temp. 15.5° VTXC press 1109 GAS check OK
12:00 Closure Still Petra Break
14^{35} PETRA announces "INJECTION"
CAMAC crystal-controlled clock reset according to time signal. HEH.

26.8.85

16^{00} Klemmt & Sindelar on shift
16^{40} Gas check O.K
21^{03} Level 8 hangup in real triggers in N10, repeatedly
Reloading TOF and Plessey processors (F15, F7, F11) seems to have helped. If error occurs again, try reloading TOF + Plessey. If this doesn't help, switch them off (F15, F9) J.O.

23^{03} "No trigger" Recover / Continue didn't help → stopped run 22450
Tried next run with output not written → FAMP transfer error, slave and info: 3, 99 → FAMP was switched off
Next run 22451 to IBM without FAMP → O.K.

23^{38} Bunch-marker-Histograms empty for last runs – It's all in overflow!

27.8.85 0^{00}~ Kawagoe + Bethke

0^{20} Gas Check OK.
3^{41} 4 nice Muhads within 5 minutes. Resonance?

8^{00} Elsen, Feist on shift
8^{01} problems with 1 RF-transmitter emitter
8^{15} gas check done, Kreinhof 10.2
8^{30} "short break". Restart 9^{00}
magnet to 2000 amps.
9^{35} magnet: 7500 amps
9^{50} FiBuy ready
11^{20} Notice all crates in br 4 after crate 3 missing. Touch Crate Controller (w/o Hammer) and the system comes again.
14^{00} FAMP Check. Slave nr 3 had tripped, no response. Unclear why data taking stopped. Reactivating successful.
If it happens again, leave off until further...

14^{15} IBM goes down for maintenance. We try to write to tape, however the missing IBM link forces us to stop run.
J.O. rebuilds IDAS and we are finally able to write to tape (w/o IBM-link).
H.E.H and J.O. try to locate problem.
During all the testing we reset the run number to 22465 and rewind the tape.
Strange things happening. The PETRA currents are updated sporadically. Mark-J see the same thing.

16^{00} H.H. Hellenbrand + A. Mills (deputising for J. Chrin) on shift
gas check o.k.
17^{00} J. Chrin arrives.
17^{33} IBM link now back up. We will continue to write to tape until the end of the current run (22468).
17^{39} X-Y-Z Error. Trigger 1 output missing SO.

18:21 New Fill. Writing data to IBM (Run 22469)

20:35 ONE GREAT BIG POWER FAILURE!

PETRA and ALL EXPTS OFF!
Jan Olsson switched off all of the computer
DL8 crates + FADC crates off
Gasalarm "Pumpe unter Jethammer" disappeared at once when power came back
21:55 power back
Nord started
system crates on
CAMAC, terminals, Gould & TV on
miprocs reloaded
TOKYO leadglass resetted
TOF + TAGGING on
muon chamber voltages on
IDAS system newly built. Several irregular features of datataking now seems to be gone.
DL8 pulser run OK, nothing illegal!

magnet still down, K-people are very busy, try again later

28.8. Spitzer, Schneekloth on shift (split the shift, since PETRA restart about 8a.m.)
0^{20} gas checked, P18 and P22 are off.

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RUN	DATE	START	STOP	AT RUN START I+	AT RUN START I-	DEAD TIME (%)	TIME (secs)	RECORDS IN	RECORDS OUT	ALL ×10⁶	TØ REJECT ×10⁶	T1 ACC SUM	T2 ACC SUM	T1 BIT 2 E_LG > 6 GeV	T2 BIT 17 2T. E_LG > 2TR
22466	27/8/85	15:34	16:26	4.89	5.18	13.5	3088	8002	3984	804	109	4509	5395	1355	15
22467	"	16:29	17:24	4.12	4.59	11.3	3341	8002	3720	870	98	4650	5431	1367	20
22468	"	17:31	17.50	3.38	3.72	10.9	1056	2430	1062	275	29	1416	1675	433	7
22469	"	18:23	19:09	6.18	6.35	16.2	2732	8002	4212	711	115	4167	5337	1273	36
22470	"	19:10	19:59	5.24	5.51	13.7	2950	8002	3976	768	105	4386	5492	1302	20
22471	"	19:59	20:35	4.47	4.76										
22472	30.8.85	23^06	23^08	3.26	3.55	56.2	177	462	321	45	25	206	294	78	3
22473	31.8.85	027	036	6.60	6.63	54	385	1053	611	100	54	1109	719	145	5
22475	"	125	143	6.25	6.09	45.5	895	2554	1411	232	106	2945	1808	450	16
22476	"	144	235	5.66	5.65	28.1	3002	8002	4231	781	219	3942	5820	293	23
22477	"	235	331	4.21	4.46	16.3	3321	8001	3952	863	723	4343	5837	1314	32
22478	"	331	345	2.79	3.31	11.2	747	1628	656	194	21	897	1227	246	6
22479	"	414	511	6.44	6.52	35.9	2925	8002	4308	761	272	3740	5649	1268	34
22480	"	511	601	5.29	4.84	22.5	2960	8002	4126	770	173	4052	5948	1299	40
22481	"	601	654	4.64	4.08	17.2	3110	8001	3975	809	139	4334	5742	1417	32
22482	"	654	750	4.07	3.39	13.7	3314	8002	3844	862	118	4628	5674	1518	32
22483	"														
22484															
22485															
22486															
22487	"	9:35	10:24	5.70	5.65	22.5	2952	8002	4643	768	173	4059	5618	1372	81
22488	"	10 25	1119	4.97	4.70	15.6	3219	8002	3894	838	131	4360	5750	1456	36
22489	"	11 20	1121	4.20	3.53	12.2	77	222	112	20	2	117	142	45	1
22490	"	1242	1331	6.29	6.37	27.1	2944	8002	4159	767	208	3892	5714	1287	30
22491	"	1332	1401	5.40	4.80	20.7	1680	4409	2227	437	91	2318	3091	830	18
22492	"	1402	1407	4.83	4.03	17.4	285	778	418	74	13	408	556	129	3
22493	"	1452	1506	6.30	6.27	32.7	805	2189	1163	210	69	990	1569	319	13
22494	"	16^07	17^06	5.68	5.50	26.5		7091	3361						
22495	"	17"		4.81	4.61	15.8	3072	8002	3910	739	126	4357	5573	1449	26
22496	"	18^03	18^56	4.33	4.04	14.4	3171	8002	3776	825	119	4478	5648	1445	29
22497	"	18^59	19^32					722	350						
22498	"	19^39	20^25	5.87	5.42	22.2	2862	8002	4078	745	165	3987	5560	1419	23
22499	"	20^26	21^15	5.16	4.64	17.1	2980	8002	3899	776	133	4349	5470	1502	23
22500	"	21^16	22^03	4.56	4.08	14.3	3123	8002	3664	813	116	4600	5477	1546	22
22501	"	22^09	22^16	4.02	3.96	14.0	400	1093	497	103	14	625	691	243	25

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PROCESSORS ON/OFF NB	MIP	TOF	FAMP	<L> 10^{30} cm^{-2}s^{-1}	∫Ldt nb^{-1}	∫Ldt Exp. ENERGY	IBM/TAPE OUTPUT	AT RUN START ID (μA)	AT RUN START TOF (V)	ONLINE REJ. SUM HITPROC T2 %	ONLINE REJ. NORD-50 T1,R T2 %	Σ BHABHA	MH	EBEAM	MAG FIELD −1.6 STABIL	
ON	ON	ON	OFF	3.51	10.60	12650.85	3DAS07	1.0	0.55	45	53	120	3	21.802	4.846	
"	"	"	"	2.62	8.31	12659.16	3DAS08	0.9	0.48	46	55	94	1	"	4.846	
"	"	"	"	1.80	3.18	12662.34	3DAS09	0.75	0.40	47	59	36	3	"	"	beams dumped
"	"	"	"	5.25	12.63	12674.97	IBM	1.4	0.8	39	50	143	2	21.800	"	
"	"	"	"	3.96	12.28	12687.25	"	1.2	0.65	44	53	139	2	21.802	4.844	
"	"	"	"				"	1.0	0.5							Run Summary lost, Petra/Day Beam Failure
"	"	"	"	0.42	0.18	12687.43	"	1.2	1.5	40	35	2	0	21.802	4.847	beams dumped
"	"	"	ON	1.81	0.71	12688.14	"	1.8	2.0	38	44	8	0	21.800	"	beams lost
"	"	"	"	2.28	2.03	12690.17	"	2.0	2.4	37	47	23	2	"	"	
"	"	"	"	2.03	5.74	12695.91	"	1.4	1.2	43	50	65	4	"	"	
"	"	"	"	1.22	3.45	12699.36	"	1.1	0.8	47	54	39	3	"	4840	
"	"	"	"	0.73	0.71	12700.07	"	1.0	0.5	50	63	8	0	"	"	beams dumped
"	"	"	"	1.79	5.21	12705.28	"	1.8	1.8	40	49	59	0	"	4838	
"	"	"	"	1.57	3.53	12708.81	"	1.2	1.0	45	51	40	1	21.802	"	
"	"	"	"	1.20	3.0	12711.81	"	1.0	0.8	46	53	34	0	"	4839	
"	"	"	"	0.99	3.80	12715.61	"	0.9	0.6	48	54	43	2	"	4837	beams dumped
"	"	"	"					0.7	0.5							no events due to NORD problems
"	"	"	"	2.19	5.84	12720.65	"	1.15	1.0	41	52	57	3	21.800	4841	
"	"	"	"	1.67	5.39	12726.04	"	1.1	0.8	46	54	61	1	"	4844	
"	"	"	"	1.20	0.09	12726.13	"			46	56	1	0	"	"	beams lost
"	"	"	"	2.51	6.45	12732.58	"	1.4	1.1	41	51	73	4	"	"	
"	"	"	"	1.99	3.53	12736.11	"	1.0	0.8	45	53	40	1	"	"	stop to reload VC mproc
"	"	"	"	1.40	0.62	12736.73	"	1.0	0.75	46	49	7	0	"	4848	beams lost
"	"	"	"	2.24	2.39	12739.12	"	1.15	1.25	39	50	27	1	"	4847	beams lost
"	"	"	"	2.66	5.39	12744.51	"		~1.0				≥2		4844	DISC trouble attend.
"	"	"	"	2.19	6.73	12751.24	"	1.0	0.65	45	54	64	1	"	4844	
"	"	"	"	1.76	5.92	12757.16	"	0.9	0.6	47	55	67	2	"	4843	
"	"	"	"	2.78	7.51	12764.67	"	1.1	1.1	41	52	85	3	"	-4841	beams dumped
"	"	"	"	2.29	6.45	12771.12	"	1.0	0.6	44	26	73	2	"	-4841	
"	"	"	"	1.85	5.21	12776.33	"	0.9	0.5	47	36	59	1	"	-4841	
				1.81	0.44	12776.77	"					5	0	"	"	beams dumped

6⁵⁰ MK1 informed about our magnet problem. They still have a lot to do, come when possible.
7¹⁰ TV Screen: Nett-Störung
08⁰⁰ – KREHBIEL & HEDGECOCK.
08¹⁵ – GAS CHECKS COMPLETED – LOOKS NORMAL!?!?
after speaking to H. SEIDEL, it was noted that the input pressure to the chamber was too high. This was corrected by changing the value for the compressor bypass. Now correct. P17 – 1000 (WAS 1080!)

There was a TOF TDC with permanent bit Error. Replaced. It was N17 Cr 3 (the upper), for TOF Counters 17, 59, 18, 60 Krehbiel

12⁰⁰ Event as in JDAS manual A 8.2
"A click – all the lights go out and silence descends on the hall."
Unable to obey command A 8.2 d) second part. No Power Switch can be spotted at back of DISC drive
12²⁰ Big crash: Power on again; ☠ All beeping.
DL8 stay off for safety, also VV30 off. S.B.
Computer off, disk off. It may happen again.
Air conditioning works. Called MK3 to start the "Dach Lüfter" again.
All kinds of Errors in the Magnet panel. (Water flows and so) Called MK1.

Computer stays off. Disc drive blower (round back) is on, blowing air on disc – that's allright. HEF

16⁴⁰ Gas check done. Balauf and Kreislauf of mixture differ by 0.5.
O_2 reading is 45 for channel 5, which is > 2.5 × 12
Roland Rehfeld informed. He will come. Krehbiel

Probably due to wild changes caused by the power failure. Just keep an eye on it. CLH

The logbook is an important document, please don't write with pencil!
R. Fest

20⁰⁰ Camac temp 13.3° J.O.

29/8/85	Time	Signature	PETRA screen	Temperature hardw.	VTX pressure	GAS check
	0⁰⁰	Warning	"restart not before 29.08"	16.5°	1123	OK ✓
	4⁰⁰	Becker	" "	17°	1118	OK
	8¹⁵	C. Klein-rat	" "	17.1°	1123	OK

11⁰⁰ called PKR: tomorrow morning a broken transformator will be reinstalled → PETRA RESTART NOT TODAY
12⁰⁰ Gas check done again.

	PETRA screen	Temperature hardw.	VTX chamber pr.	Gas Check
12⁰⁰	RESTART NOT POSSIBLE BEFORE 29.8.85	16.6 °C	1123 mb	OK.

Let's hist today!

16⁰⁵ A. FINCH WIEDER REGIN CA. 20 L/HR + U. Schneekloth on shift — 18.5 % — OK
Switched Nord on. MIPROC, TOF processors loaded.

We fear another power break around 8pm. Three power fails in last 48 hrs have destroyed two computers. Thus we decide that the JDAS Nord should be powered down until the danger is past. HEF/SO.
23⁰⁰ Everything on again. Petra has short break (busy problems). DL8 debugging

23⁵⁵ DL8 switched on and partly debugged. All Camac-crates are back after some troubles. Datataking during test run without any problems.
changed several DL8: reg 22 cell 3 wire 9-16 old # 206, new # 264
" 22 " 4 " 9-16 " 52 " 63
" 23 " 2 " 9-16 " 39 " 9

Remaining ID errors, visible in the standard histos:
– 3 single wires missing
– wires 16-23 (3. DL8) ~~missing~~ have too low amplitudes.
but, timing case ok, so only A-info is shaky. Decide to leave this problem until tomorrow.

So system is running, datataking possible. But... where are beams?? S.B.

30.8.85
0.00 Chin & Hagnussen on shift
0.05 Gas check o.K.
2:00 Injection appears on screen – but no sign of any beams. Magnet ON and current raised to 1000 A.
3:00 No change.
3:15 1st signs of some beams: (positrons)
6.25 I^+ 1.91 I^- 1.23 promising. slowly ramp magnet up (→ 3000 A → ")
6:40 I^+ 0 I^- 0 " " → 5000 A)
6:50 I^+ 3.75 I^- 2.72

7¹⁰ Magnet trip ; Feuchtigkeitsmessgerät Alarm !
Durchfluß hitesd on Durchfluß sekundär on
Leckwanne on
Pumpen anstatt 1-2 on

7⁴⁰ We can't reset the magnet and called MK1 ; they don't know anything about our magnet and can't help us. A second call to MK1 after talking to J. Olsson. The guy from MK1 will try to reach Mr. Lassen, who seems to be the one who knows the JADE magnet. In case we manage to cure the problem and Mr. Lassen [→ We can't detect any wakleak] war nicht here yet please call MK1 and cancel. Lassen was here

7⁵⁰ Mr. Maschidlauskas may know how to fix the magnet (Felst told us over the phone) We phoned him up and he'll come by

7⁵⁶ Mr. Maschidlauskas will delegate the problem to Mr. Seidel (he should know)

7⁵⁹ Z-chamber alarm. HT-alarm ⇐ 6 V-alarm on. ⇐ Z-chamber expert called. Reset O.K.

8⁰⁰ Heiseltime, Spitzer

8.57 Checked TOF, FWMU and TAG High Voltages. MFR 61 was all 0, I set it to nominal values. Now all limits are fine.

~ 9⁰⁰ Seidel replaced a watersensor in the magnet

9⁵⁵ " Restart ca 16.00" Problems with HF

11³⁰ Injection. Magnet to 7500 A

16⁰⁰ R. Felst + H. Mills on shift
Magnet → 1000 A

16⁵⁵ PKR claims to be ready for injection magnet → 7500 A

18⁵⁰ Central two coolers switched to 'schnell' since ID getting too warm. These must be reset ~ 21.00

19⁴⁰ restart 20³⁰ appears on the screen, magnet → 1000 A

20⁶¹ restart Ca 21⁸⁰ — then 22⁰⁰

21³⁰ Beams start to appear. Magnet up, fans reduced. Gas check OK.

22⁴⁰ get beams at 21.0 GeV, but have terrible background. PKR tries to fix some beam position monitor before optimizing

23¹⁰ Finally managed to reduce the background to start a short run 22472 for check out background still huge, deadtime ~ 60%, luminosity minute, but detector seems to be O.K

PKR dumps the beam

28⁵¹ New beams (6.7 mA/beam) ready. TOF meter up against the stops.
31/8/85 0000 Schneekloth & Glasser no beam

0 27 new fill ready, started RUN 22473, high background TOF ≈ 2 V, VTACH ≈ 50 µA
0 37 beams lost
1:16 the BKR can't get background down

1 20 started RUN 22474, MP-16 and TOF off, no events, MP reloaded
1 25 " " 22475, high background, PKR trips to optimize
1 44 " 22476
1 46 Z-CH. hard trip
2 37 µ crate 6 frequently missing. Doesn't reset normally.
7 55 we can't start a new run, message MEMRY AREA = 1093 SHOULD BE 966 MSIZE = 0 (on IDAS-console)
runs 22483-86 no events
8 02 beams dumped

8⁰⁰ Olsen, Murphy on shift

8¹² Reload N60 (according to J.O.'s advice) to see if above error reappears. Nothing unusual though. Jan suspects N50 to have caused the message since it showed up on the operator console. The system console logged no message. Cannot be the N60 since NOTHING came on the system console. (Sounds like AMP?)
N-60 only writes on IDAS console when loading/exiting
In fact it comes from ZIDAS when allocating memory.

9 35 start new run
~~or~~ IDAS error 73 camac access fail branch 1 crate 7 3PCH.

MU CRATE 6 had to be reset locally.
11 21 Beams lost.

13 45 YSPY: "BP-CHAM Wireinfo no hits: 127 157
BP-CHAM Wireinfo hits when off: 155"
This message twice.
Histogram shows anomalies of this kind (127 very low); but IBM PC shows no such effect.
14 01 Stop run 22491; reload vertex chamber sproc (as instructed by Kleinwort)
15 50 Roof fans 2 3 3 switched to 2 (fast). Rucksack temp. = 38°C behind racks

16⁰⁰ H. Mills & D. Haidt on shift
16 49 Run paused due to bad beam conditions, called PKR
16 51 Continue run 22494
17 10 Gas checked

17[07] Several !! TRANSF (disc transfererrors) over last 5 mins. Finally data-taking ground to a halt when NO TRIGGERS came & PAUSE didn't work.
Moved system disc to Orange drive & start run 22495. – this run complete without any problem

21[35] Reformjob submitted.

22[50] At start of new fill ITron crate 6 would not work. Phoned JC up – followed his patent methodh all OK.
(First 2000 NIO events run 22502 affected).

ZOG continued in book XVII, p. 1

you find a new log-book
next to the old ones on the shelf