JADE LOG BOOK XV Runs 18898 – 21041

Ein Brunnen-Erzeugnis

JADE LOG BOOK

No XV

30.10.84 – 31.5.85

Runs 18898 – 21041

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 $E_{LG} \geq 6$ GeV	T_2 BIT 17 2T · $E_4 \cdot \geq 2$TR

Processors ON/OFF N50	MIP	TOF	FAMP	<L> 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 MIPROC T_2 %	ONLINE REJ NORD 50 T_1 & T_2 %	Σ_{Bhabha}	MH	E_{beam}	Mag. Field	Remarks

30/10/84 0:00 Bethke + Yamada on night-shift

3:05 no evts, Pause/continue does not work. Stop run and disconnect FAMP following Laurikainen's message.
3:10 ID. VTX-ch trip. (hard trip)
3:30 At event-display: non increasing wire-number. Hole in ID-wire map.
Cleaning contacts + doing test-run helped. Continue new run.
3:48 Missing CAMs occur in: br 1 cr 1 / vx-ch
br 3 cr 2 / Barrel ch
br 2 cr 4 / TOF2 ch.
For short time deadtime → 30%, rate 6..7 Hz
after some time reduces to 15%, rat 3..4 Hz (normal)

6:20 Synchrotron vacuum defect. Restart ca. 15:00. Current fill kept.
7:40 Several illegal wire-numbers, timings etc in ID. Change DL8 pos. 36 (wire # 788→)
from DL8:20 to DL8:21.
7:45 We also have this super-events that cause the funny shape of ID mean hits/per wire.
7:10 "LG Barrel >250" now nearly constantly on.

8:00 Warning, Schmidt on shift.

8:30 In the last 30 minutes 12 times SDAS Error 33 Missing CAM branch 3 Crate 2

8:15 Compressor 1 switched off to see if there is any influence on LG Barrel >250 MHz ⇒ no effect
compressor 2 switched off ⇒ no change
compressor 3 switched off ⇒ no change
compressors 1+2+3 switched off ⇒ no change

8:30 TOF 1-28 switched off ⇒ reduction of the error message by about a factor 20
TOF 1-28 again on ⇒ increase " " " " " " 20
TOF 1-28 switched off again ⇒ reduction " " " " " " 12-15
TOF 1-28 again on ⇒ increase " " " "

RUN | DATE | START | STOP | AT RUN START I+ I− | DEAD TIME (%) | TIME (sec) | RECORDS IN | RECORDS OUT | ALL *10^6 | TØ REJ *10^6 | T1 ACC SUM | T2 ACC SUM | T1 Bit2 E4>6GeV | T2 BIT 17 2T·E4·≥2TR | Processors ON/OFF N50 MIP TOF FAMP | <L> 10^30 cm^-2 sec^-1 | Bhabha ∫Ldt nb^-1 | ∫Ldt EXP, energy | IBM/Tape OUTPUT | At Run Start ID (μA) TOF (V) | ONLINE REJ SUB MIPROC T2 % NORD 50 T1 & T2 % | Σ Bhabha | MH | E beam | Mag. Field | Remarks

RUN	DATE	Start	stop	At Run Start I^+_{mA}	At Run Start I^-_{mA}	Dead Time %	Time sec	Records In	Records Out	All $*10^6$	TØ Rej $*10^6$	T_1 Acc Sum	T_2 Acc Sum	$T_1 \cdot$ Bit2 $E_{LG}>6GeV$	$T_2 \cdot$ Bit17 $2T \cdot E_4 \cdot \geq 2Tr$
												1287	1472	355	13
18898	30/10/84	0:19	0:33	5.38	6.25	21.4	827	2515	1497	215	46	1263	1176	456	7
EXP24 18899	"	2:57	3:09	5.66	5.66	21.2	723	2408	1539	188	328	1266	1394	376	9
18900	"	3:11	3:32	5,44	5,44	28.1	987	2708	2073	254	77	5055	3874	2680	23
18901	"	3:49	4:37	4.97	4.97	20.0	2506	8002	3693	657	130	4339	4962	1139	33
18902	"	4:31	5:26	4.48	4.48	14.6	3246	8001	4323	844	123	4547	4961	1180	37
18903	"	5:26	6:26	3.94	3,94	12.6	3557	8001	4158	926	117	4260	4250	1087	24
18904	"	6:26	7:27	3.46	3.47	13.5	3465	8002	5031	902	122	1004	863	238	1
18905	"	7:27	7:41	3.08	3.09	20.1	799	2094	1476	208	42	3580	2451	1043	12
18906	"	7:48	8:40	2.86	2.87	33.3	3025	8002	5752	788	262	3841	1931	1263	9
18907	"	8:40	9:22	2.70	2.71	32.4	2471	8001	6065	643	208	747	337	243	3
18908	"	9:22	9:31	2.51	2.53	33,8	469	1590	1222	122	41	4946	3607	1058	23
18909	"	12:06	13:19	1.94	1.96	11.1	4327	7670	3641	1126	125	4319	3905	1811	27
18910	30/10	20.06	20.57	5.92	5.87	33.4	2828	8002	5334	736	245	3839	4653	1025	29
18911	"	20.56	21:52	5.24	5.20	21.0	3005	8002	5067	782	164	4160	4555	1073	20
18912	"	21:51	22.46	4.61	4.59	18.2	3197	8002	4625	831	151	3555	3616	333	17
18913	"	22.46	23:35	4.08	4.06	15.8	2733	6507	3613	711	112	2378	2396	588	17
18914	"	23:37	0.09	3.67	3.66	12.1	1858	4046	2234	483	59	3879	4576	960	41
18915	31/10/84	3:36	4:34	5.85	5.92	21.6	2842	8001	4957	739	160	3941	4517	1002	24
18916	"	4:34	5:37	5.06	5.13	18.0	2926	8002	5286	762	137	4419	4544	1090	46
18917	"	5:46	6:44	4.23	4.30	17.2	3450	8001	4751	898	155	2665	2529	672	18
18918	"	6:45	7:25	3.68	3.75	24.6	~~4848~~ 2274	~~4848~~ ~~2687~~	2687	592	146	4090	5003	1055	39
18919	"	7:48	8:41	4.82	4.98	18.5	2964	8002	4634	771	142	1631	1744	402	14
18920	"	8.42	9:03	4.79	4.95	16.8	1121	2953	1666	291	49				
18921	Empty														
18922	"	9.06	9.44	4.50	4.66	16.1	2215	5519	3102	577	93	3101	3197	789	29
18923	"	9:44	9:59	4.08	4.23	13.4	838	2026	1143	218	29	1135	1183	305	8
18924	"	9.59	10.00	3.92	4.07	15.6	2408	5659	3174	626	97	3230	3120	796	13
18925	Empty														
18926	"	10.53	11:26	3.45	3.59	11.8	1916	4036	2141	498	59	2475	2319	588	16
18927	"	11.27	11:44	3.19	3.32	12.3	941	1872	964	244	30	1148	1045	267	9
18928	"	12.14	13:06 ~~[illegible]~~	5.59	5.62	18.1	2967	8002	4599	771	139	4282	5030	1109	31
18929	Empty														
18930	"	13:08 ~~[illegible]~~	13:39	4.81	4.84	14.7	1323	3500	1908	345	51	1983	2070	496	14
18931	"	13.44	14.33	4.39	4.40	15.0	2443	6054	3334	636	96	3442	3276	877	28

RUN	Processors ON/OFF N50	MIP	TOF	FAmp	$\langle L \rangle$ $*10^{30}$	$\int Ldt$ nb^{-1}	$\int Ldt$ Exp. energy	IBM/Tape output	At Run Start ID (μA)	At Run Start TOF (V)	On Line Rej Miproc T_2 %	On Line Rej NORD-50 T_1 & T_2 %	Σ Bhabha	MH	E_{beam}	Mag. Field	Remarks
							3467,14										
18898	ON	ON	ON	ON	3.82	3.16	3470.30	IBM	2.0	1.25 ~~0.5~~	35	45	46	1	22.1	4179	Beams lost
18899	"	"	"	"	3.30	2.38	3472.68	"	2.0	0.95	27	41	24	0	"	4169	
18900	"	"	"	OFF	3,12	3,06	3475.74	"	2.0	0.95	18	26	41	0	"	4171	
18901	"	"	"	"	2.64	6.61	3482.35	"	1.8	0.8	39	58	84	1	"	4165	
18902	"	"	"	"	2.32	7.53	3489.88	"	1.8	0.7	41	51	85	1	"	4193	
18903	"	"	"	"	1.87	6.65	3496.53	"	–	–	44	52	64	0	"	4171	
18904	"	"	"	"	1.56	5.41	3504,94	"	1.5	0.65	34	42	57	1	"	4195	
18905	"	"	"	"	1.18	0.94	3502.88	"	1.3	0.50	32	39	12	0	"	4192	
18906	"	"	"	"	0.92	2.77	3505,65	"	1.2	0.5	43	45	28	0	"	4189	} Pickups from sparking PM
18907	"	"	"	"	0.77	1.91	3507,56	"	1.1	0,44	50	39	21	0	"	4153	
18908	"	"	"	"	0.53	0.25	3507,71	"	1.0	0,40	50	40	5	0	"	4184	
18909	"	"	"	OFF	0.31	1.33	3509,04	"	0.8	0,32	50	60	18	0	"	4194	
18910	"	"	"	OFF	3.07	8.69	3517.73	"	2.1	1.1	37	39	87	2	"	4158	
18911	"	"	"	"	2.85	8.68	3526.41	"	2.0	0.9	37	44	107	3	"		
18912	"	"	"	"	2.29	7.31	3533.72	"	1.8	0.85	41	49	83	2	"	4175	
18913	"	"	"	"	1.87	5.11	3538.83	"	1.7	0.75	42	57	54	3	"	4190	
18914	"	"	"	"	1.65	3.07	3541.90	"	1.6	0.65	45	49	44	2	"	4177	
18915	"	"	"	"	3.40	9.66	3551.56	"	2.0	1,1	34	44	108	4	"	4193	
18916	"	"	"	"	2.83	8.28	3559.84	"	1.8	0.8	32	39	110	1	"	4169	
18917	"	"	"	"	2.07	7.14	3566.98	"	1.6	0.72	44	47	77	6	"	4191	
18918	"	"	"	"	1.36	3.10	3570.08	"	1.5	0.7	43	53	28	1	"	4186	
18919	"	"	"	OFF	3.42	10.13	3580.21	"	2.0	1.2	38	47	109	3	"	4196	
18920	"	"	"	ON	3.06	3.43	3583.64	" Also F11211	1.8	0.8	40	48	32	1	"	4187	"No Events" Trigger Problem (Nord) ?.
18921																	
18922	"	"	"	OFF	2.77	6.14	3589.78	IBM + F11211	1.8	0.8	43	49	68	3	"	4190	
18923	"	"	"	"	2.58	2.16	3591.94	IBM	1.7	0.7	41	48	30	2	"	4191	
18924	"	"	"	ON	2.22	5.34	3597.28	IBM + F11105	1.4	0.65	44	50	52	0	"	4193	~~[illegible]~~ No Events prob. Trigger (Nord)
18925	"	"	"	"				IBM/+ F11105	1.2	0.6							
18926	"	"	"	"	1.69	3.24	3600.52	IBM + F11105	1.2	0.6	48	52	37	1	"	4179	
18927	"	"	"	OFF	1.39	1.31	3601.83	IBM	1.2	0.55	48	54	18	1	"	4168	Beam dumped
18928	"	"	"	ON	3.52	10.46	3612.29	IBM + F11099	2.0	1.0	40	47	134	7	"	4161	
18929																	
18930	"	"	"	OFF	3.18	4.20	3616.49	IBM	1.8	0.85	40	50	43	2	"	4164	~~[illegible]~~
18931	"	"	"	ON	2.48	6.06	3622.55	IBM + F11106	1.7	0.75	41	51	71	2	"	4166	"No events.."

RUN	DATE	START	STOP	AT RUN START I^+	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 $E_{LG} \geq 6$ GeV	T_2 BIT 17 2T· E_4 · ≥2TR

 30/10/84

11^{30} We have looked on each PM-output. All seemed to be ok but channel 25 had some noise.
HV-25 was disconnected ⇒ still error messages, no change.
All HV-subunits were pulled out one after the other ⇒ no change.
At the end we tried to reconfirme the measured effect (page 1) but we found no effect.
As chanal 25 has some noise we looked at chanal 67. The amplitude was changing by a factor ~ 4-5. So we disconected chanal 67 ⇒ allmost no error messages.
Chanal TOF 67 is disconnected

12^{00} Start Run 18903
13^{18} beams dumped
16.00 Hellenbrand (wo ist er?), Narosha
20.10 beams, lumi run
20.22 ID + Vtx soft trip
Changed HV of TOF and FWMU so that HV program does not give an error message any more.
Also there should be no hole in the TOFTDC hit map.

Missing Lam branch 3 crate 2 : Muon chambers comes
JDAS RO ERROR 46 MP-16 out of sequence 44=1 ~~||||~~ ~~||||~~ ||| ||||
JDAS RO ERROR 33 Missing LAM br 1 cr 1 (Vertex ch) ~~||||~~ ~~||||~~
JDAS RO ERROR 53 System Crate Watchdog flag on PARM = 000024 (oct) ||

21.29 Vertex ch Soft trip

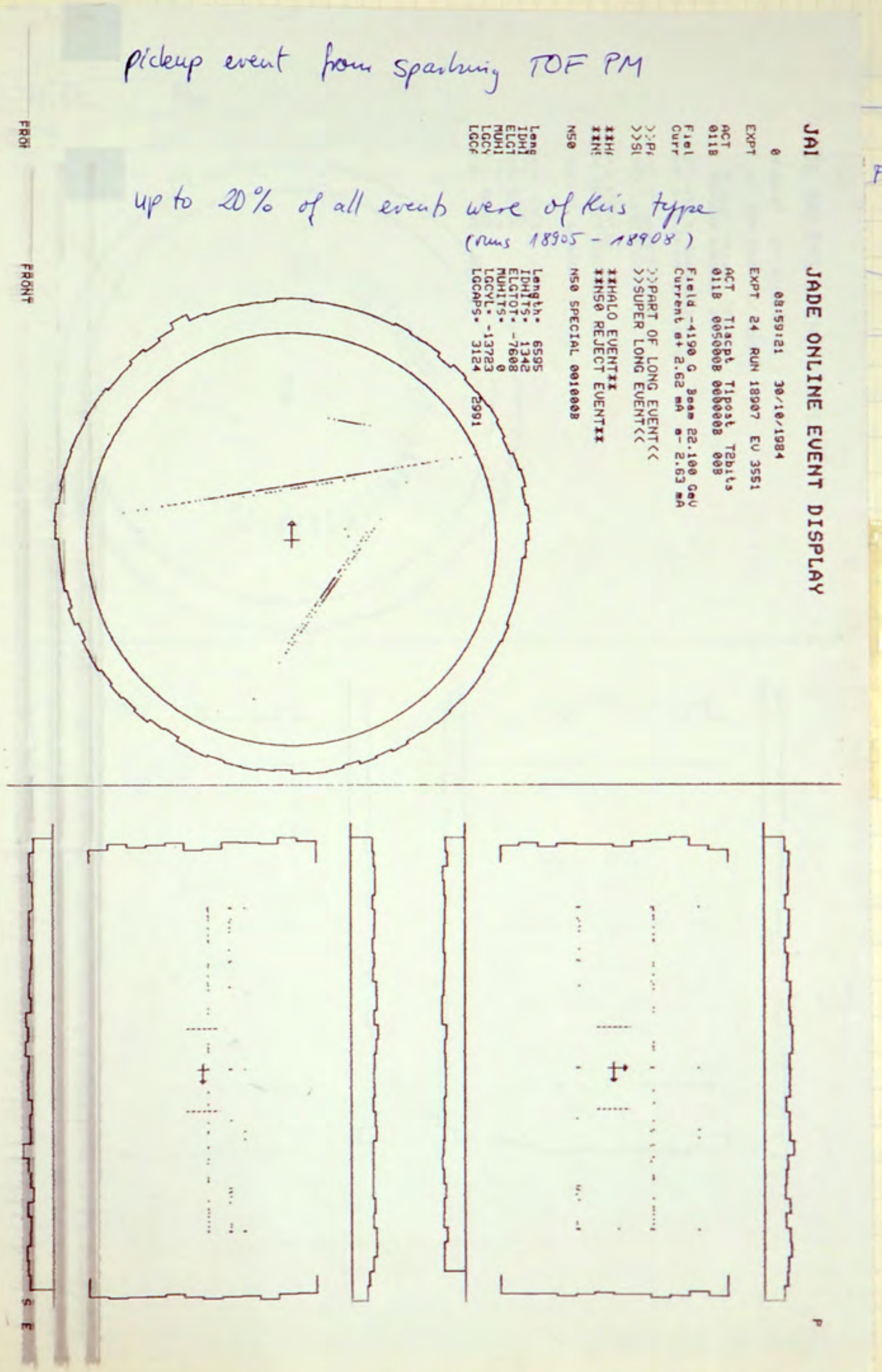
RUN 18974 stopped because of JDAS Readout ERROR 33 / MISSING LAM br. 3 cr. 5 : Z-Chamber Part 2 continuously

23.42 We consulted expert J. Olson about all these errors. He says nothing can be done at the moment. So you have to keep trying. They seem to come in spells: Sometimes every few minutes, then not at all. Just for safety I looked at all TOF counters again. They all look sound.

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)	TOF (V)	ONLINE REJ SUM N50 / T_2 %	NORD 50 T_1 & T_2 %	Σ Bhabha	MH	E_{beam}	Mag. Field	Remarks

pickup event from sparking TOF PM

up to 20% of all events were of this type
(runs 18905 - 18908)



~~PARM = 00024 |
Vertex ch. ||
TOF counter |
μ chambers |||~~
18915

P T O →

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_4 ·>2TR

4 30/10/84

11^{30} We have looked on each PM-output. All seemed to be ok but channel 25 had some noise.
HV-25 was disconnected ⇒ still error message, no change.
All HV-subunits were pulled out on
At the end we tried to reconfirme
As chanal 25 has some noise
factor ~ 4-5. So we discone
Chanal TOF 67 is disconnecte

12^{00} Start Run 18903
13^{18} beam dumped
16.00 Hellenbrand (wo ist er?
20.10 beams, lumi run
20.22 ID + Vtx soft trip
Changed
does not
Also there

missing lam branch

JDAS RO ERROR 46

JDAS RO ERROR 33

JDAS RO ERROR 53

21.29 Vertex ch Softtrip

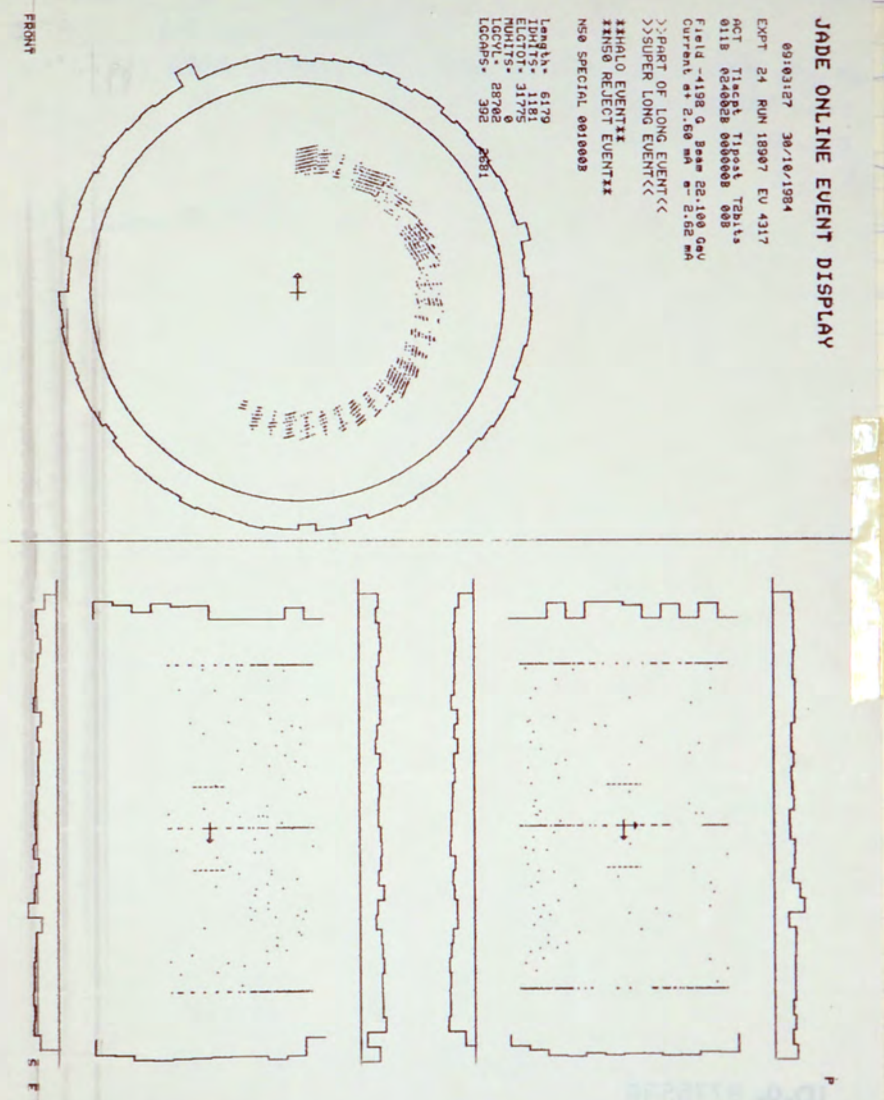
RUN 18974 stopped
JDAS Readout ERROR 33 Missi

23.42 We consulted expert
can be done at the
They seem to come in
at all. Just for safet
They all look sound

Processors ON/OFF N50	MIP	TOF	FAMP	⟨L⟩ 10^{30} cm^{-2}s^{-1}	Bhabha ∫Ldt nb^{-1}	∫Ldt exp, energy	IBM/Tape OUTPUT	At Run Start ID (μA)	TOF (V)	ONLINE REJ MIPROC T_2 %	NORD 50 T_1 & T_2 %	Σ Bhabha	MH	E_{beam}	Mag. Field	Remarks

5

pickup event from sparking TOF PM



~~18915~~
~~PARM = 0002Y~~
~~Vertex ch. | 1~~
~~TOF counters | 11~~
~~μ chamber | 1~~
~~| 111~~

P T O →

RUN	DATE	START	STOP	AT RUN START I^+	I^-	DEAD TIME (%)	TIME (sec)	RECORDS IN	RECORDS OUT	ALL $\times 10^6$	$T\emptyset$ REJ $\times 10^6$	T_1 ACC SUM	T_2 ACC SUM	T_1 Bit 2 $E_4 \geq 6$ GeV	T_2 BIT 17 $2T \cdot E_4 \cdot \geq 2TR$

New fill around midnight.
12:00 Nye & Schneekloth on shift.
4:04 ID & Vtx detector soft trip.
5:00 LG Alarm : "HV 4" Over current. We turned unit off & on again and it went away. Is that what we were supposed to do? No instructions on how to deal with LG alarms could be found.

JDAS ERRORS 33 8 53 CONTINUE (see page 4 for details)

5:40 DL8 34 missing – rear contacts cleaned with eraser → OK.
5:45 Started run 18917
6:30 "IBM BUSY" frequently occurs – quite serious for a time but ~~went~~ went away again (went away when disk was dumped)
8:00 Diedmann + ~~the~~ Kourrikainen on shift

15^{25} Modification made to YEDISP (event display) to cater for JETCH hitcounter >8. Pickup events in ID now look different but just as uninformative! (FER)

16^{00} Stephen & Kodo on shift

16^{22} # 18933 ended because LG > 250 events was permanently on.

17.50 This time the forward muon counters caused the noisy events. Switch off for the rest of the run.

19^{40} Soft Trip reset OK

19^{50} Vertex detector soft Trip – reset OK.

There have been several Vertex chamber soft trips – all reset OK

1.11.84 Hellenbrand, Schneekloth on shift
Several Vtx ch. soft trips
0 27 beams lost, ID tripped

Processors ON/OFF N50	MIP	TOF	FAMP	$\langle L \rangle$ 10^{30} cm^{-2}s^{-1}	Bhabha $\int Ldt$ nb^{-1}	$\int Ldt$ Exp, energy	IBM/Tape OUTPUT	At Run Start ID (μA)	TOF (V)	ONLINE REJ SUB/MIPROC T_2 %	NORD 50 T_1 & T_2 %	Σ Bhabha	MH	E_{beam}	Mag. Field	Remarks

1:40 problems with vertex chamber soft trip~~s~~s
when there was a soft trip and we tried to switch on again the vertex chamber, it tripped again a few seconds after it reached the full voltage this happened several times. (always 3rd quadrant)
sometimes the vertex chamber was off for half an hour.
Nevertheless we continued data taking RUNs 18941 + 18942
no problems with vertex chamber RUNs 18943 + 18944 + 18945
5:00 New filling ready within 15 min.
problems with vertex chamber start again. After 15 min it was possible to switch on.
5 15 ID tripped But only for 2 min.
O.K. after another 10 min.

6:10 NORD hang up level 01
6 32 no triggers, pause/continue didn't help, started new run
6:49 beams dumped, energy saving, called K to run down magnet.
6:50 magnet at 0 Amps

8.00 Davies & Weber on shift
9.00 Energy saving time over; PETRA starts accellerating a good fill, but loose it; magnet turned on by Pillat;
9.33 JDAS Readout Error 33 – Missing Jam Branch 1 Crate 1 : Vertex chamber

11-12 Vertex trip at start of run.
11 17 REFORM working once more
11 21 Pietarinen and Kourrikainen ask us to stop run in order to ~~tet~~ put in FAMP;
11:22 FAMP is now in, but not doing analysis; they just want to study the communication between FAMP and NORD
11:51 FAMP taken out, since it creates trouble with data taking (NORD hang-up)
12:12 Vertex Chamber Trip; reset; ok.
13:00 JDAS READ OUT ERROR 46 – MP16 OUT OF SEQUENCE : YY = 1
13:05 Stop Run 18956 because "no triggers" · start new run; notice soft Vert. Chamb. Trip.
14 01 Vtx trip (soft); ~~[illegible]~~ Soft Tripped again on 1st reset, Then hard tripped on 2nd reset But reset finally on 3rd try!!
14:45 TV-Monitor: "Bitte unterbrechen bis 16.45; Neustart ca. 19.00 Uhr"

RUN | DATE | START | STOP | AT RUN START I+ I− | DEAD TIME (%) | TIME (sec) | RECORDS IN | RECORDS OUT | ALL ×10^6 | TØ REJ ×10^6 | T1 ACC SUM | T2 ACC SUM | T1 Bit 2 E_LG > 6 GeV | T2 BIT 17 2T·E4·≥2TR | Processors ON/OFF N50 MIP TOF FAMP | <L> 10^30 cm^-2 sec^-1 | Bhabha ∫Ldt nb^-1 | ∫Ldt exp, energy | IBM/Tape OUTPUT | At Run Start ID (μA) TOF (V) | ONLINE REJ MIPROC T2 % NORD 50 T1 & T2 % | Σ Bhabha | MH | E_beam | Mag. Field | Remarks

RUN	DATE	START	STOP	AT RUN START I^+	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 $2T \cdot E_4 \geq 2TR$
18932	31/10/84	14:33	15:41	3.91	3.92	14.0	3574	8001	4155	930	130	4694	4397	1121	27
18933	"	15:48	16.22	3.35	3.37	21	1898	4588	2696	494	104	2663	2013	621	13
~~18934~~															
18934	"	17:46	17:51	5.43	5.59	69.3	253	1067	858	66	20	541	52	83	7
18935	"	18:13	19:06	5.01	5.17	18.2	3141	8001	4516	818	149	4439	4786	1129	31
18936	"	19:07	20:07	4.29	4.45	15.5	3225	8002	4648	839	130	4612	4398	1257	27
18937	"	20:07	21:12	3.70	3.85	13.2	3669	8002	4184	954	125	4852	4434	1216	37
18938	"	21:12	22:20	3.19	3.34	11.9	3983	8001	3824	1036	123	5113	4299	1108	28
18939	"	22:20	23:20	2.78	2.91	11.0	3193	6178	2865	831	91	3937	3271	857	22
18940	"	23:47	0:71	6.29	6.21	22.7	2241	6598	3970	583	133	3451	3918	902	27
18941	1.11.84	1:04	1:50	6.25	6.23	25.8	2651	8002	4862	689	178	3804	5134	991	41
18942	"	1:50	2:38	5.49	5.48	18.9	2830	8001	4584	736	139	4238	5368	1071	30
18943	"	2:38	3:32	4.79	4.78	16.0	3199	8002	4319	833	133	4490	5091	1116	30
18944	"	3:31	4:29	4.19	4.18	14.1	3408	8002	4255	887	125	4783	4553	1177	34
18945	"	4:28	4:39	3.66	3.66	17.6	581	1414	850	151	27	767	684	181	4
18946	"	5:02	5:51	6.22	6.20	24.5	2720	8002	4851	708	174	4041	4895	1100	30
18947	"	5:51	6.10	5.38	5.33	20.8		2175	1282						
18948	"	only 5 TRIG													
18949	"	6:20	6:34	4.94	4.97	20.5	672	1964	1182	174	36	1030	1095	268	10
18951	"	6:41	6:49	4.66	4.69	14.8 (~~14.4~~)	494	1332	745	128	19	731	823	193	7
18952	"	9.32	10.07	5.90	6.00	25.0	2072	5724	3308	538	134	2680	3811	703	24
18953	"	11.14	11.21	5.90	5.80	28.1	177	641	382	46	13	248	323	42	2
18954	"	11:22	11:51	5.78	5.69	21.6	1676	4854	2883	436	94	2381	2842	589	21
18955	"	11:52	12:45	5.33	5.25	19.9	2982	8002	4779	776	154	4108	4653	1050	25
18956	"	12:47	13:05	4.62	4.55	21.9	975	2776	1771	254	56	1551	1330	563	7
18957	"	13.07	14.02	4.4	4.33	17.6	3245	8001	4539	845	149	4409	4348	1005	21
18958	"	14:03	15:21	3.85	3.79	12.3	3849	8002	4049	1002	123	4979	4486	1092	37
18959	"	14:22	16:35	3.23	3.19	11.4	4114	8002	3820	1070	122	5036	4558	1096	22
18960	"	16:36	16:49	2.78	2.75	10.9	766	1514	731	199	22	928	776	189	7
18961	2/11/84	11:03	11:53	5.77	5.50	20.2	2999	8002	4588	781	158	3773	5322	883	34
18962	"	11:53	12:53	5.04	4.80	15.8	3375	8002	4498	879	139	4230	5041	965	29
18963	"	12.54	13:44	4.36	4.14	12.4	2948	6398	3375	769	95	3593	3982	795	24
18964	"	14.19	15:10	6.05	6.09	23.4	(27258??)	8002	4687	709	166	4021	5139	899	46
18965	"	15:13	15:35					1584	925			NO		R U	N

RUN	PROCESSORS ON/OFF N50	MIP	TOF	FAMP	<L>	$\int L\,dt$	$\int L\,dt$ exp	IBM/TAPE OUTPUT	AT RUN START ID (μA)	TOF (V)	ONLINE Rej MIPROC T_2 %	N50 T_1 & T_2	Σ Bhabha	MH	E_{Beam}	Mag. Field	Remarks
18932	ON	ON	ON	OFF	1.67	5.98	3628.53	IBM	1.6	0.75	45	54	65	4	22.100	4159	
18933	"	"	"	"	1.55	2.95	3631.48	"	1.4	0.55	46	50	40	3	"	4171	ended because of LG problems. Beams dumped.
18934	ON	ON	ON	OFF	1.66	0.42	3631.90	"	2.0	1.0	25	36	1	0	"	4184	counters were switched ON and OFF because of permanent LG > 250 hits
18935	"	"	"	"	3.33	10.47	3642.37	TAPE F22B71	1.8	0.88	42	48	146	1	"	4757	
18936	"	"	"	"	2.28	7.36	3649.73	IBM	1.5	0.72	44	47	89	3	"	4796	
18937	"	"	"	"	1.80	6.62	3656.35	"	1.4	0.65	47	53	68	1	"	4171	
18938	"	"	"	"	1.33	5.28	3661.63	"	1.2	0.56	47	57	42	1	"	4786	
18939	"	"	"	"	1.01	3.22	3664.85	"	1.0	0.45	48	59	40	5	"	4745	beams dumped
18940	"	"	"	"	4.42	9.91	3674.76	"	2.1	1.2	37	44	110	6	"	4182	beams lost
18941	on	on	on	off	4.11	10.89	3685.65	IBM	2.1	1.1	37	45	128	2	22.100	4170	
18942	"	"	"	"	3.79	10.72	3696.37	"	1.8	0.95	41	46	120	3	"	4206	partly without vertex ch.
18943	"	"	"	"	2.82	9.02	3705.39	"	1.6	0.8	43	50	126	4	"	4195	
18944	"	"	"	"	2.31	787	3713.26	"	1.4	0.72	45	52	90	1	"	4191	
18945	"	"	"	"	1.70	0.99	3714.25	"	1.3	0.66	47	50	13	0	"	4163	beams dumped
18946	"	"	"	"	4.16	11.32	3725.57	"	2.1	1.3	38	45	130	2	"	4151	partly without vtx ch.
18947	"	"	"	"	3.71	2.67	3728.24	"	1.8	1.0					"	4170	NORD hang up
18948	"	"	"	"				"									
18949	"	"	"	"	3.29	2.21	3730.45	"	1.7	1.0	40	46	32	0	"	4164	
18951	"	"	"	"	2.95	1.46	3731.91	"	1.6	1.0	41	48	18	0	"	4168	beams dumped
18952	"	"	"	"	3.22	6.68	3738.59	"	2.4	0.9	35	47	78	0	"	4254	short break, then dumped
18953	–	–	–	–	2.96	0.52	3739.11	"	2.2	1.1	19	51	1	0	"	4228	Stopped run to put FAMP on
18954	–	–	–	ON	4.02	6.36	3745.47	"	2.2	1.1	36	57	70	0	–	4216	FAMP ON, No FAMP bank added
18955	"	"	"	off	3.40	11.26	3756.73	"	1.8	0.9	39	53	124	5	"	4216	" off
18956	"	"	"	"	2.92	2.81	3759.54	"	1.7	0.78	36	55	31	0	"	4227	
18957	"	"	"	"	2.5	8.10	3767.64	"	1.6	0.75	44	51	85	3	"	4220	
18958	"	"	"	"	1.92	6.90	3774.54	"	1.4	0.6	47	54	76	5	"	4223	
18959	"	"	"	"	1.46	5.99	3780.53	"	1.3	0.53	49	57	59	0	"	4218	
18960	"	"	"	"	0.99	0.76	3781.29	"	1.1	0.44	45	58	7	0	"	4222	beam dumped.
18961	"	"	"	OFF	3.23	9.70	3790.99	"	2.2	1.2	37	48	106	8	"	4202	
18962	"	"	"	"	2.49	8.41	3799.40	"	2.2	1.1	44	50	82	7	"	4185	
18963	"	"	"	"	2.12	6.25	3805.65	"	1.5	0.7	44	52	74	2	"	4182	beams dumped
18964	"	"	"	"	(0.34)	9.18	3814.83	"	2.1	1.2	36	45	89	3	"	4158	Timing table for trigger box: cts 1/10 sec, so time + Lumi are wrong ↓
18965	"	"	"	"	(—) S	U M M — 1.60	3816.43	"	2.0	1.0	22	41	AR Y		"	—	Problem with IBM link

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 $2T \cdot E_4 \cdot \rightarrow 2TR$

1.11.84 Krehbiel & Kawagoe on shift

16^{21} Vtx Chamber soft trip.

16^{45} Just in time: JDAS ZMAG ERROR - Event longer than reserved block
Run 18960 TERMINATED

Begin of Energy-Saving time

19^{10} "short break" !
restart CA 9:00 PM
restart CA 11:00 PM

Test to find anomalous events.

1. Run with all TOF on, LG on, Magnet off.
500 Triggers, no anomalous
2.) Same with Magnet on, no anomalons
(LG > 250 Bhabhas etc.)

So it must be something else. Petra magnets were at 7.840. Suspicion TOF counter from viewing (67)

~~19^{15}~~ 22^{15} Phone call to PKR: Most likely no beam before midnight.

23^{00} "UNTERBRECHUNG,
RESTART CA 00.00

2/11/84

0:00 Dittrich & Stephens

No beams at all
(Restart 9⁰⁰)

08:00 W. Bartel & J. Nye (rate - again !)
09:00 Magnet 1450 Amp
10:35 Beam
11:15 JDAS Readout error 73 - Camac access fail branch 1 crate 1 : vertex ~~detect~~ chamber
11:50 ID & Vtx soft trips - for rate & ID current (all dramatically after switching back on) but no significant loss of beam !?
11:55 JDAS error 73 as above. (8 12:10)
Occasional JDAS Readout error 33 : Mess. Lam br 1 cr 1 : vtx ch.
" " " " " " 2 3 : tof 1 counters

15:13 wrongly patched cables (all 19 wire 7 and all 20 wire 1) exchanged. Ike

Processors ON/OFF N50	MIP	TOF	FAMP	<L> 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)	TOF (V)	ONLINE REJ ~~SUMS~~ MIPROC T_2 %	NORD 50 T_1 & T_2 %	Σ_{Bhabha}	MH	E_{beam}	Mag. Field	Remarks

15:11 "IBM BUSY" permanently on
"IBM transfer error ERR053 SUBERR #0 ERR CNT 0"
- tried IBM LINK again => ok.
Vtx chamber soft-trip then 2 hard trips.

15:30 Again - „IBM BUSY" permanently on
=> then no triggers. — Run stopped ~~on~~ - no run summary ! (18965)

New Run (18966) started ok.

16:00 Bethke and Boudry on shift
16:20 We discover that the clock input to the trigger box is 10Hz not 1Hz (from the beginning of this fill).
This explains the wrong values of TIME and MEAN LUMI on the run sheets.
We will correct the problem at the end of the current run.
16:46 Message from Becker: please submit repo - jobs this night !
16:55 Run stopped, rundown magnet for energy saving.
17:00 Energy saving time
20:20 After several attempts to refill Petra, now we have beam again.
21:21 ID + vxch soft trip.
21:44 Level 5 trigger box hangup
21:45 System Crate watchdog flag on (Readout error 53)
After continuing: Message "too quick, display busy..." after trying for event-display.
Something happened?
21:56 Vxch soft, then hard trip
~~23:19~~ Several missing LAM's in random order, all the time: vxch, Muon, TOF, ... (not ID!)
23:58 Stop Run 18971 for beam dumps

3.11.84

0:00 P. Laurikainen and H. Rieseberg on shift
0:33 New fill ready, Start Run 18972
Shortly afterwards Energy shifts due to a transmitter error (east) in Vederdamber coor current
3:20 Stop Run 18974 for refilling
3:45 New fill ready, start Run 18975
7:10 Stop Run 18977 for refilling

RUN | DATE | START | STOP | AT RUN START I+ I− | DEAD TIME (%) | TIME (sec) | RECORDS IN | RECORDS OUT | ALL *10^6 | TØ REJ *10^6 | T1 ACC SUM | T2 ACC SUM | T1 BIT 2 E14>6GeV | T2 BIT 17 2T·E4·≥2TR
Processors ON/OFF N50 MIP TOF FAMP | <L> | Bhabha ∫Ldt nb-1 | ∫Ldt exp, energy | IBM/Tape OUTPUT | At Run Start ID (µA) TOF (V) | ONLINE REJ MIPROC T2 % NORD 50 T1 & T2 % | Σ Bhabha | MH | E beam | Mag. Field | Remarks

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 $*10^6$	T1 Acc sum	T2 Acc sum	T_1 Bit 2 ($E_{14}>6$GeV)	T_2 Bit 17 $2T\cdot E_4 \geq 2TR$
18966	2/11/84	15:36	16:26	4.91	4.95	17.0	29665	8002	4581	772	131	4416	4815	933	29
18967	"	16:27	16:54	4.30	4.34	14.3	1590	4022	2263	419	59	2401	2291	496	23
18968	"	20:23	21:13	5.73	5.94	18.7	2848	8002	4521	741	139	4224	4859	1312	34
18969	"	21:14	22:28	5.00	5.20	17.7	3474	8002	4458	904	159	4287	5243	1072	36
18970	"	22:29	23:29	4.12	4.30	14.5	3318	8002	3886	863	124	5038	4306	1998	29
18971	"	23:30	0:02	3.55	3.72	14.9	1771	4691	1964	461	69	3315	2105	1659	13
18972	3.11.84	00:39	1:47	5.55	5.89	15.1	3367	8002	4436	876	133	4329	4873	1066	32
18973	"	01:48	3:03	3.71	4.19	13.4	3735	8001	4194	972	131	4603	4652	962	33
18974	"	3:04	3:20	3.08	3.51	12.7	562	1207	644	146	19	709	659	144	5
18975	"	3:54	4:59	5.60	5.71	15.2%	3110	8002	4442	809	123	4258	5183	978	30
18976	"	4:59	6:05	4.68	4.80	14.1	3465 ~~8002~~	8002	4195	901	775	4522	5144	1022	34
18977	"	6:05	7:11	3.94	4.05	12.2	3431	7167	3555	894	109	4306	4257	960	25
18978–79	"	Empty													
18980	"	8:04	9:18	4.96	4.84	13.5	3720	8001	4126	968	130	4649	5027	1020	33
18981		Empty													
18982	"	9:58	10:56	6.19	6.28	22.5	2864	8001	4697	745	168	3730	5452	966	26
18983	"	11:03	12:15	5.16	5.25	19.2	3305	8002	4296	860	164	4332	5205	1001	29
18984	"	12:15	13:33	4.26	4.35	11.6	3774	8002	3961	982	124	4614	4969	1016	15
18985	"	13:34	14:01	3.57	3.38	10.0	1571	3031	1424	408	40	1854	1927	390	12
18986		Empty													
18987	"	15,33	16:02	5.81	6.17	25.9 ~~1409~~	1409	3977	2359	367	95	1845	2774	437	18
18988	"	16:12	17:03	4,86	5,22	15,8	3067	8002	4189	798	126	4215	5267	1052	21
18989	"	17:04	18:01	4,92	4,55	19,3	3443	8002	4057	897	110	4619	4911	1023	21
18990	"	18^{02}	19^{05}	3.66	3.97	11.0	3795	8002	3948	988	109	4862	4859	1128	39
18991	"	19^{05}	19^{17}	3.16	3.45	10.5	432	940	469	112	12	584	497	117	10
18992	"	20^{06}	20^{53}	5.93	6.08	19.2	2758	8429	5016	717	137	4944	5018	1966	30
18993	"	20^{53}	21^{45}	5.23	5.37	17.8	3115	8001	4404	810	144	4337	5157	1092	39
18994	"	21^{45}	22^{25}	4.53	4.67	14.1	2302	5016	2932	599	84	3145	3929	727	21
18995	"	22^{25}	22^{31}	4.06	4.17	13.4	322	825	444	83	11	460	484	104	1
18996	4.11.84	0057	0149	5.30	5.93	17.2	3122	8002	4384	811	140	3959	5268	910	29
18997	"	0150	0245	4.61	5.15	13.7	3334	8002	3976	867	119	4335	5226	986	25
18998	"	0246	0346	4.00	4.48	12.4	3589	8001	3927	934	115	4496	5025	944	23
18999	"	0346	0458	3.47	3.90	10.7	3884	7931	3583	1010	108	4722	4799	962	33
19000	"	0631	0657	5.80	5.87	18.6	1269	3262	1679	330	61	1478	2259	303	15

Run	Processors on/off N50	MIP	TOF	FAMP	<L> $10^{30}cm^{-2}s^{-1}$	∫L dt nb^{-1}	∫L dt exp energy	IBM/Tape output	At run start ID (µA)	TOF (V)	Online rejection Mipproc %	N50 %	Σ Bhabha	MH	E beam	Mag field	Remarks
18966	ON	ON	ON	OFF	(0.26*10)	7.69	3816.43 / 3824.12	IBM	1.8	0.8	41	47	73	4	22 100	-4171	
18967	"	"	"	"	2.4	3.81	3827.93	"	1.6	0.8	43	47	34	0	"	?	Run stopped for energy saving
18968	"	"	"	"	3.74	10.66	3838.59	"	2.0	1.2	38	48	122	3	"	4218	
18969	"	"	"	"	2.86	9.95	3848.54	"	1.8	0.95	42	48	101	1	"	4183	
18970	"	"	"	"	2.03	6.75	3855.29	"	1.8	0.75	44	55	71	1	22.102	4174	
18971	"	"	"	"	1.59	2.81	3858.10	"	1.3	0.6	48	62	30	2	22.100	4209	Beams dumped About 10 min with E_b - 22.121 GeV
18972	"	"	"	"	2.59	8.72	3866.82	"	2.1	1.2	41	50	102	2	"	4177	
18973	"	"	"	"	1.83	6.84	3873.66	"	1.6	0.75	45	53	81	3	"	4168	
18974	"	"	"	"	1.43	0.81	3874.47	"	1.3	0.6	45	53	9	0	"	4190	Beams dumped
18975	"	"	"	"	3.55	11.05	3885.52	"	2.0	1.1	39	48	121	0	"	4196	
18976	"	"	"	"	2.62	9.07	3894.59	"	1.6	0.85	43	51	89	4	"	4183	
18977	"	"	"	"	1.77	6.08	3900.67	"	1.4	0.7	46	55	76	4	"	4184	Beams dumped
18980	"	"	"	"	2.27	8.43	3909.10	"	1.7	0.8	45	52	91	5	"	4187	
18982	"	"	"	"	3.61	10.34	3910.44	"	2.0	1.1	37	46	130	0	"	4177	
18983	"	"	"	"	2.67	8.82	3919.26	"	1.7	0.85	41	50	74	2	"	4175	
18984	"	"	"	"	1.72	6.48	3925.74	"	1.6	0.80	43	54	77	1	"	4.174	
18985	"	"	"	"	1.54	2.43	3928.17	"	1.4	0.60	47	56	27	1	"	4162	Beam dump
18987	"	"	"	"	3.81	5.37	3933.54	"	1.7	0.8	35	44	60	1	"	4177	Short break (prob. [illegible])
18988	"	"	"	"	2,98	9,15	3942.69	"	1,9	0,9	39	49	122	3	"	-4154	
18989	"	"	"	"	2,40	8,26	3950.95	"	1,8	0,75	41	53	116	2	"	-4176	
18990	"	"	"	"	1.92	8.17	3959.12	"	1,55	0,7	45	54	90	2	"	4199	
18991	"	"	"	"	1.69	0.54	3959.66	"	?	?	41	54	6	0	"	4180	Beams dumped
18992	"	"	"	"	3.85	9.90	3969.56	"	2.1	1.05	39	43	109	3	"	4200	No vertex-chamber
18993	"	"	"	"	3.24	10.11	3979.67	"	1.9	0.95	40	48	103	5	"	4163	Vertex-ch. on!
18994	"	"	"	"	2.56	5.89	3985.56	"	1.65	0.79	41	51	63	3	"	4163	SENDERAUFALL - RUN STOPPED.
18995	"	"	"	"	1.91	0.62	3986.18	"	1.6	0.71	40	51	5	0	22.115	4203	ENERGY MODIFIED ?? BEAMS LOST
18996	"	"	"	"	3.17	9.89	3996.07	"	2.2	1.05	37	50	96	2	22.100	4177	
18997	"	"	"	"	2.37	7.89	4003.96	"	1.95	0.92	40	54	82	2	"	4187	
18998	"	"	"	"	1.87	6.73	4010.69	"	1.8 ~~1.55~~	0.80	41	55	54	4	"	4176	
18999	"	"	"	"	1.37	5.31	4016.00	"	1.65	0.60	43	58	59	2	"	4199	Beams dumped
19000	"	"	"	"	1.62	2.05	4018.05	"	2.0	1.1	34	54	18	2	"	4193	Beams lost

RUN	DATE	START	STOP	AT RUN START I^+	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 $E_{LG} \geq 6$ GeV	T_2 BIT 17 2T· $E_4 \geq$ 2TR

3.11.84 cont'd

7^{20} Error record from our shift.
Besides the "normal" Missing LAM B1 C1 (Vertex) we got the following JDAS errors:
ERROR 74 Wrong Lam B1 C1 1×
" 45 MP-16 analysis incomplete, YY=1 ~3×
" 53 System crate watch dog flag on, PARM = 000024 (oct) ~4×
one of which with printing Address 111217 Level (dec) 8

But more annoying than the JDAS errors ~~than~~ were the Vertex chamber soft trips (as already noticed by the shift before us)
We have had 21 Beam pipe chamber alarms. Most of them were soft*) and double, that means that when reaching the max. voltage the chamber tripped a second time.
→ We lost 1 h out of 6 by the BPC trips. Probably the TOF rate threshold is too low or there is a pick up. We couldn't observe any TOF rate fluctuation up to 3 Volts. ID stayed on all the time.

*) Often Anode over current Q 3 [:] + Soft Alarm

7^{40} New fill ready. Problems with switching on.

8^{00} Dietrich & Diedmann
JDAS ERROR 33 Missing Lam brand 1 crate 1 VTX
12^{30} Very frequent Vtx Chamber Trips Call H. Kodo current limit for quadrant 3 raised to 24 μA

16^{00} Cartwright, Olsson (HK)
16^{20} JDAS READOUT ERROR 33 — Missing LAM br 1 cr 1 : Vertex Chamber
17^{00} Run 18988 has >3000 Nonexisting LG blocks: Order of Magnitude beyond normal! Next run not!
19^{10} VXC soft trip - followed by hard trip while running up.
19^{20} "RUN SUMMARY PRINTING" on TV, but no run summary; plotter on REMOTE, but no READY light → switched plotter off & on: run summary duly appeared (less first two lines).
20^{00} R18992 without vertex-chamber, cannot switch it on (always tripping)
20^{50} Successfully switched on vertex-chamber, by turning voltage run-up speed selector to "very slow" for last 200V or so.
21^{00} Forward Muon Counters were switched on. No 7 was found to be breaking down. Switched volts to zero. Counters 2 & 7 are both faulty! Water???
21^{25} "No triggers" appears. Pause/Continue works!
21^{35} "DITTO" "DITTO"
21^{50} —"— —"—

Processors ON/OFF N50	MIP	TOF	FAMP	<L> 10^{30} cm^{-2}s^{-1}	Bhabha ∫Ldt nb^{-1}	∫Ldt exp, energy	IBM/Tape OUTPUT	At Run Start ID (μA)	TOF (V)	ONLINE REJ SUP MIPROC T_2 %	NORD SR T_1 & T_2 %	Σ Bhabha	MH	E_{beam}	Mag. Field	Remarks

4.11.84
0:00 Murphy, Kleinwort on shift

8:00 Takeshita + Bethke on shift

If ID stays on and only vxch trips, the reason is not TOF rate. In this case it's only special vxch - soft trip.

8:15 Found my bicycle on top of the Rucksack. Obviously one of the saturday shift-crews was not satisfied by doing only shift. I would not be surprised next time to find a car on top of the muon filter...

12:07 Several errors, as usual: - 53, watchdog flag on Parm: 24
- 33, Missing lam vxch, Mu-ch, ...
13:~~40~~ Vx ch soft trip, than ID soft trip, beams lost (1 h before this: a beautiful multi hadronic event.)
13:45 Submitted 4 Reform-jobs. now there are 28 Refo-jobs (L) in the queue waiting for execution.
14^{48} Soft Trip in both (V+ID) chamber (TOF>10V). just at that time "Switch OFF" on TV.

16^{00} Stephens + Kawagoe on Shift.

16^{19} (Vertex + ID) Hard trip. both reset OK. (no visible change in TOF rate)

16^{53} Vtx ch. hard trip. took three attempts before it came on.

19^{20} Richard Hedgecock switches on forward muon counters (except 2 & 7) at start of run # 19011
19^{23} Vtx chamber trip. reset on second attempt.
21^{26} Vtx chamber trip.
NB - Could not end run # 19013 using usual JDAS terminal "O" and "Ø" characters refused to function EVEN IN LOCAL. Therefore abandoned this terminal for the YSPY terminal and changed YSPY Baud rate from 4800 to the required 9600. After which it once more sprang into life. The problem was compounded by the GOULD Printer

RUN	DATE	START	STOP	AT RUN START I^+	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 $E_{L4} \geq 6$ GeV	T_2 BIT 17 2T· E_4 · ≥2TR

16

RUN	DATE	START	STOP	I^+	I^-	DEAD TIME %	TIME SEC	RECORDS IN	OUT	ALL x10^6	TØ REJ x10^6	T1 Acc SUM	T2 Acc SUM	T1 Bit 2	T2 Bit 17
19001	4.11.84	8:27	9:17	5.71	6.25	19.2	2953	8002	4432	769	148	4192	5137	260	37
19002	"	9:17	10:14	4.97	5.44	15.5	3365	8002	4238	876	136	4353	5293	987	35
19003	"	10^{14}	11^{17}	4.26	4.68	12.9	3730	8002	4140	971	125	4647	5081	1053	37
19004	"	11^{17}	12^{22}	3.69	4.06	11.1	3879	7768	3669	1010	172	4688	4833	989	35
19005	"	13^{05}	13^{45}	5.87	6.33	20.6	2063	5760	3272	536	110	2904	3679	717	33
19006	"	14^{17}	14^{49}	6.01	6.31	26.1	1916	5652	3275	498	130	2669	3781	691	22
19007	"	15^{37}	16^{34}	5.42	5.67	20.3	3004	8002	4792	781	159	4070	5131	1029	30
19008	"	16:34	17^{41}	4.61	4.80	14.0	3498	8002	4172	911	127	4493	5059	1024	33
19009	"	17^{41}	18^{09}	3.74	3.82	11.4	1609	3457	1715	419	48	2083	2005	461	13
19010	"	18^{33}	19^{20}	5.85	5.72	21.0	2773	8002	4382	721	152	4220	4990	1343	33
19011	"	19^{20}	20^{17}	5.09	5.36	17.8	3103	8001	4324	807	144	4354	5078	1028	24
19012	"	20^{17}	21^{15}	4.31	4.55	13.2	3442	8001	4084	895	118	4657	4881	502	26
19013	"	21^{15}	21^{29}	3.68	3.90		792	1693	834	206	24	1016	1035	232	4
19014	"	22^{22}	23^{13}	5.78	5.63	17.8	3024	8002	4793	786	140	4490	5269	992	46
19015	"	23^{13}	23^{56}	4.93	4.80	14.8	2545	6370	3366	661	97.8	3620	4056	859	22
19016	5.11.84	0^{15}	0^{39}	3.95	3.84	9.3	1404	3046	1509	365	34	1870	1978	410	16
~~19017~~	~~"~~	~~does~~	~~not~~	~~exist~~											
19018	"	0^{57}	1^{56}	3.54	3.44	11.5	3494	6955	3335	908	104	4387	4117	895	28
19019	"	2^{23}	3^{13}	5.54	6.05	17.6	2983	8001	4353	640	136	4135	5098	1030	34
19020	"	3^{14}	4^{08}	4.74	5.20	15.6	3230	8002	4407	709	132	4294	4904	1042	24
19021	"	4^{08}	4^{16}	4.01	4.43	13.1	457	1030	580	114	15	559	607	145	7
19022	"	4^{20}	4^{21}	3.87	4.28	11.7	24	87	48	6	0.7	41	35	9	1
19023	"	4^{25}	4^{32}	3.82	4.22	16.9	365	1048	501	95	16	459	490	99	3
19024	"	4^{36}	5^{39}	3.71	4.10	12.3	3788	8002	4062	986	121	4842	4746	1049	25
19025	"	5^{40}	6^{00}	3.13	3.48	10.7	1192	2411	1170	310	33	1506	1372	329	11

END of 1984 Running

Processors ON/OFF N50	MIP	TOF	FAMP	⟨L⟩ 10^{30}	Bhabha ∫Ldt nb^{-1}	$\int L dt_{exp, energy}$	IBM/Tape OUTPUT	At Run Start ID (μA)	TOF (V)	ONLINE REJ SUB MIPROC T_2 %	NORD-50 T_1 & T_2 %	Σ_{Bhabha}	MH	E_{beam}	Mag. Field	Remarks

17

RUN	N50	MIP	TOF	FAmp	⟨L⟩ x10^30	∫Ldt nb^-1	∫Ldt	IBM/TAPE	ID μA	TOF V	MIP T2%	N-50	Σ Bhabha	MH	Ebeam GeV	Mag.	REMARKS
19001	ON	ON	ON	OFF	3.52	10.41	4028.46	IBM	2.1	~~2.1~~ 1.2	39	49	112	#2	22100	4190	
19002	"	"	"	"	2.73	9.18	4037.64	"	1.9	1.0	42	51	86	#1	"	4162	
19003	"	"	"	"	1.89	7.06	4044.70	"	1.6	0.8	45	52	84	5	"	4179	
19004	"	"	"	"	1.22	4.74	4049.44	"	1.4	0.64	46	56	59	0	"	4173	beam dumped
19005	"	"	"	"	3.41	7.03	4056.07	"	2.2	1.1	36	47	75	4	22.100	4206	b. lost
19006	"	"	"	"	3.57	6.85	4062.92	"	2.0	1.2	36	47	74	1	"	4167	Beam lost
19007	"	"	"	"	3.37	10.12	4073.04	"	2.1	1.2	39	45	121	5	"	4181	
19008	"	"	"	"	2.35	8.24	4081.28	"	1.9	0.82	43	52	103	3	"	4167	
19009	"	"	"	"	1.97	3.17	4083.45	"	1.4	0.66	45	55	39	1	"	4196	Beam dumped.
19010	"	"	"	"	3.70	10.26	4093.71	"	2.2	1.2	37	49	106	2	"	4162	
19011	"	"	"	"	3.03	9.39	4103.10	"	1.9	1.0	41	50	101	6	"	4168	
19012	"	"	"	"	2.21	7.61	4110.41	"	1.6	0.8	42	52	85	2	"	4183	
19013	"	"	"	"	1.91	1.52	4112.23	"	1.4	0.68	45	54	11	1	"	4198	beam dumped.
19014	"	"	"	"	3.68	11.14	4123.37	"	1.8	1.1	40	44	130	3	"	4196	
19015	"	"	"	"	2.79	7.10	4130.47	"	1.6	0.9	42	50	87	2	"	4212	
19016	"	"	"	"	2.06	2.89	4133.36	"	1.3	0.7	48	53	36	2	"	4171	without VTX-ch.
19017									1.2	0.65							aborted by Nord
19018	"	"	"	"	1.53	5.36	4138.72	"	1.2	0.63	48	55	65	2	"	4186	with VTX-ch., Beams dumped
19019	"	"	"	"	3.43	10.22	4148.94	"	2.0	1.25	36	49	142	2	"	4211	
19020	"	"	"	"	2.71	8.75	4157.69	"	1.9	1.0	38	49	107	5	"	4190	
19021	"	"	"	"	2.23	0.97	4158.66	"	1.8	0.8	40	49	11	0	"	4184	Nord 50 Run Error
19022	"	"	"	"	2.38	0.06	4158.72	"	1.75	0.8	26	58	2	0	"	4176	no display on colour TV
19023	"	OFF	OFF	"	2.27	0.83	4159.55	"	1.75	0.8	—	57	6	0	"	4175	MP 16 & TOF were not started by Nord
19024	"	ON	ON	"	1.74	6.60	4166.15		1.4	0.7	47	53	69	0	"	4193	
19025	"	"	"	"	1.46	1.74	4167.89		1.2	0.6	48	56	21	0	"	4214	

RUN	DATE	START	STOP	AT RUN START I⁺	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 $E_{LG} \geq 6$ GeV	T_2 BIT 17 2T· $E_4 \cdot \geq 2$TR

Hanging up. .'. YSPY LUN occupied will keep appearing on screen every ~1000 events. DON'T WORRY!! (says H.E.M.)

5.11.1984

$0^{00} - 7^{00}$ Hagemann + Yamada on-shift

Run 19016 : without the vertex ch. (current too high in Q3)

0^{37} The forward muon counters were switched off according to the Richards' message.

0^{56} Nord 10 restart ← default values of CAMAC were not set automatically at run start (Run 19017 / with vertex chamber readout)

Run 19017 skipped

2^{16} New fill ready.

2^{25} missing LAM. br. 1. cr. 1. VTX-ch.

2^{45} " " 4times. (br 2. cr. 3 x1. br. 1, cr 1 x3)

4^{16} N50 run error (reloaded)

4^{26} Nord has not started MP 16 + TOF (reload Nord)

6^{00} End of 1984 running

6^{05} Group K will switch off the magnet.

6^{15} Magnet is off.

Electronics power will be kept since there is no instruction about it.
If somebody switches the power off, please keep the power for LG ON for a few days more to do some tests.

7^{45} survey of -x arch completed PWA (new physical position after water leak)

11^{45} Requested that remainder of JADE online disc be dumped... (HEM)

12^{00} ALARM !! ① LG Linear sum power supply twice → let it down alarm sw OFF
② CAMAC Z chamber crate SW OFF and ON again — ok
— Takeshita —

6/11/84 22:30 RUN 19030 - 39 : LG gain monitor (by Xe flash lamp) Runs (Kawagoe + Takeshita)

7/11/84 21^{00} Run 19044 - 19047 : VTXC-TEST DATA

7.1.1985 New disc drive installed J.O.

15.1.85 ~ 18^{40} Gas alarm noticed by Pietarinen. Channel 2, (first of) Pumpe Jet Kammer - Z : No alarm at Kontrolltechniker!
• S and V lamps are on, Meter negative at the stop of the needle. Reset : Buzzer and (V) go off.
→ No real alarm, unit broken. I inform Herrn Schwiebert.
Rbg

Processors ON/OFF N50	MIP	TOF	FAMP	⟨L⟩ 10^{30} cm⁻² sec⁻¹	Bhabha ∫Ldt nb⁻¹	∫Ldt Exp, energy	IBM/Tape OUTPUT	At Run Start ID (μA)	TOF (V)	ONLINE REJ SUB MIPROC T_2 %	NORD 50 T_1 & T_2 %	Σ Bhabha	MH	E_{beam}	Mag. Field	Remarks

7.2.85 8^{05} Air conditionner Alarm 1. Call Mr. H.M. Schult - R, 8^{30} ok MKK2 plays with the water

19.-20. 2.85 After switching-on of DL8-system problems with air-conditionner. Often temperature over 19°C (alarm 1). MKK3 people change Luftklappenstellung. No real improvement.

22.2.85 Again Alarm 1

9:17 CAMAC clock reset to time signal. HEM

15^{00} VTXC-COSMIC-RUN 19048 without magnetic field

25.2.85 15^{10} magnet at 6300 Amp but nobody using it / who ordered that!

18^{20} JDAS-Hang ups after JDAS ZMAG ERROR · Bad data block (not possible to stop run), with several tapes

17^{40} - 19^{00} Tests with VTXC and ID on, B = 4065 G

19^{20} Magnet off R

			OUTPUT		
26.2.85	10,55	Start Run 19051 (Cosmics), data send to	IBM	→ 435 Ev Summary lost	B = 4149 G
	11.40	Error Flags for Main Fr 61 T F T ?			
		" 63 T F T			
	12.10	Run 19052 lost (no Evts)	IBM		
	12.21	Run 19053 started	IBM	500 records out	
	13.26	" " ended			
	13.35	Run 19054 started	IBM	501 rec. out	
	14.37	" " ended			
	14.39	Run 19055 started	IBM	501 rec. out	
	15.41	" " ended			

16:50 Tagging high voltage switched on and reset to values used in last run period D Wavill

17.00 - 19.00 IBM-line down due to maintenance

17.21 Magnet off Bgm

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 $E_{L4} > 6$ GeV	T_2 BIT 17 2T· E_4 · ≥2TR

27/2/85 9.45 Magnet on 4148 G

Transfer — # records out

10.07 Run 19058 started — IBM — 240
10.31 " " ended

10.35 Magnet down (interlock people want to enter the magnet area)

13.35 Magnet on 4152G

27.2.85 17.00. Z-chamber calibration.
Magnet on 6400 amps.
20.15 Run 19062 started. VtxC on HV: 1475/1550 V
22^{46} Run 19062 ended — 4800 events
23^{00} MAGNET DOWN TO ZERO — THEN SWITCHED off.

28.2.85 08.30 Z-ch. cal. VTXC on HV: 1525/1550 V
Magnet on 6400 amps
IBM problems!
Try mag. tape — get ZMAC Error!
MAGNET TRIPPED off
10^{49} START RUN 19065 ←

Cosmic Test Run

Test run (FØ4) Any test (FØ9) 16
Readout 77735B 77775B with BP-ch. readout
Muon Dig ↓
Trg Source ~~3000B~~ ↓
Override ↓
T_1 acc bits Ø (stops T_1's)
T_1 pr bits ↓ (keeps T_2's)

2.52 Run 19065 stopped; HV for VTXC-changed to 1525/1400 V
3.05 Run 19066 started
3:30 Nord hang up Run 19066 ≈350 Evts (Summary lost) — tape unit was running at same time. It is difficult to make conclusions. HEM
3:32 Run 19067 started HV for VTXC 1525/1400 V
18.00 Stop. for I.D. gas works. / Gas changing solved problem. I.D-amplitudes reasonable / S.B, 1.3.85

1.3.85
15.00 Magnet 6400 amps ~~{Howard can be contacted on [illegible] after 7.30}~~
15.01 Start run 19068
18.10 Stopped run 19068 to clean up Pb-glass
Run 19069 aborted — had to reload VTX miprocs — (probably different program loaded)
18.11 19071 started

Processors ON/OFF N50	MIP	TOF	FAMP	⟨L⟩	Bhabha ∫Ldt	∫Ldt Exp, energy	IBM/Tape OUTPUT	At Run Start ID (µA)	At Run Start TOF (V)	ONLINE REJ MIPROC T_2 %	NORD 50 T_1 & T_2 %	Σ Bhabha	MH	E_{beam}	Mag. Field	Remarks

(Howard 0 0410 1 47628)

JDAS READOUT ERROR 53 — System crate watchdog flag on PARM=0000 24 (OCT) ||||11
JDAS " " 51 — Idle DL8 interrupt. Branch 4 Crate 1 1
22^{55} RUN 19071 STOPPED.
HT RUN DOWN
MAGNET TO 500 A → ZERO → SWITCHED off

2.3.85
08.10 Magnet set to 6400
08.28 Run 19072 started
11.47 Stopped run — reason boredom — needed something different.
11.48 Run 19073 started, the excitement is hard to bare, I am feeling definitely canonical.

16^{53} Magnet trip "Verdruck Brunnenwasser" Run 19073 stopped — HV run down
17^{40} Magnet on again (courtesy CRH) Run 19074 started
This means that dinner will be late. CRH
17^{55} JDAS readout error 53 — System crate watchdog flag on PARM = 00 00 24 (octal)
18^{40} — " —

19^{05} Run 19074 stopped — magnet run down
19^{10} Magnet off. Me off too.

23.20 new VTXC HV: −1650 V drift (HK)
3.3.85
07.55 De on.
Magnet set to 6400
8.10. Try to start run: Batch user logged off
N50 Prog file
@ NORD-50
NORD 50 Monitor 78.08.07
* LOAD N50 - - -
N50 Version 8410 started
100356 STOP Ø
— JDAS Readout error 56 — TOF bank wrong length = 165 ( )
— STOP Ø - AT : 001317 ** N50 cannot be started ** etc
8.27 Reboot NORD
Start run 19077 — terminates on YPARA 12: TOF1 AC 2099 (B2, C3) No response
78 — " " " TOF2 " (B2, C4) " "
TOF1 " (B2, C3) " "
NORD Hang. Reboot. JDAS Readout error 83 — Missing LAM B2 C3 : TOF1...
"
08.55 " " after booting N10, & trying to load VTX Micros, system goes crazy
lots of assembler code written to console + no response from any keys.

RUN	DATE	START	STOP	AT RUN START I^+	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 $2T \cdot E_4 \cdot \geq 2TR$

Re load all miprocs.
09.07 Run 19078 started!

Need to decide when to (i) change to 50MHz clock. (ii) do pedestal run. } meet at 16.00 hrs. (Also Krehbiel would like to do his modification at this time)

11^{48} Run 19079 started (↑ 19078 stopped because of noisy LG)
13^{15} JDAS readout error 53 – System crate watchdog flag on PARM = 000024 set
13^{58} ——— " ———— " ————
14^{25} ——— " ————
14^{30} ——— " ————
15^{10} ——— " ————
16^{00} New clock installed for zehanser DL8s. Run 19080 started.
19^{10} RUN 19080 STOPPED HV SWITCHED OFF.
MAGNET DOWN TO 500 – SWITCHED OFF 19^{20} CRH

4.3.85 De on.
08.15 Magnet run up to 6400
08.33 Start run 19081
Off we go again – JDAS READOUT ERROR 33 Missing LAM b2 c3 : TOF1
" ↓ " ↓

9.00 Status :– With TOF-processors ON the readout does not work
" " OFF sometimes get TOF wrong length at run start

With MIPROC-16 ON get JDAS error 47
" " OFF no problems

With Beampipe Chamber in the readout – Missing LAM crate 1 branch 1

Currently running with TOF1 MP-16 OFF & no Bp chamber in readout

9:02 Run 19083 to IBM –
9:55 " stopped for tests.

Processors ON/OFF N50	MIP	TOF	FAMP	⟨L⟩ 10^{30} ...	Bhabha $\int L dt$ nb^{-1}	$\int L dt$ exp, energy	IBM/Tape OUTPUT	At Run Start ID (μA)	TOF (V)	ONLINE REJ MIPROC T_2 %	NORD 50 T_1 & T_2 %	Σ_{Bhabha}	MH	E_{beam}	Mag. Field	Remarks

10:10 Problems solved – all due to the microprocessor start cable hanging loose from the trigger box. A phone call to Herr Krehbiel locates where it belongs (and the culprit).

10:12 Run 19084 to IBM.
12:56 Run stopped ~~VTX HV changed to~~
H. Krehbiel performs tests with trigger-box

Run 19086 – short cosmic run, 19087 – TOF miproc trouble

14:56 Run 19088 started to IBM. – crash after ≈ 497 events (Tape involved again)
15:37 Run 19089 ↖ VTXC HV changed to 1500/-1725 V

17:30 JDAS ERROR 53 000424 / 003424 / 003424 Run stopped

18:40 Run 19091 started VTXC HV changed to 1500/-1450 V

19:40 H. Koch on shift

21:00 Run 19091 stopped. Test of new microprozessor-program-version (III. fast)

JDAS Readout Error 53 System crate watchdog flag on PARM = 177424
" " 53 " " PARM = 000424
" " 33 (Missing LAM branch 1 crate 1
" " 53 " " PARM = 000424
" " 53 " " PARM = 003424

communication IBM-PC ⟷ Micros not possible – test aborted

21:25 new Run 19092 started, Micros reloaded with standard version, new HV setting : 1575/-1550

21:40 ID + VTXC soft trip !? reason unknown – no alarm register set, magnet stable ~ 6400 A
both switched on again.
21:45 JDAS Readout Error 53 PARM = 000424
21:54 " " " " " 003424
22:08 " " " 33 missing LAM branch 1 crate 1
23:00 Run 19092 stopped, run down HV + Magnet. New VTXC HV setting : 1500/-1790

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 Bit2 $E_{14} \geq 6$GeV	T_2 BIT17 $2T \cdot E_4 \cdot \geq 2TR$

5.3.85 DC arrives 07.55 to find all doors locked! Is this necessary?
08.42 Start run 19093 to IBM.
Clock freq. - 49.158 MHz

[Peds
Logon HEU
Run @MAN
Run @DELRU]

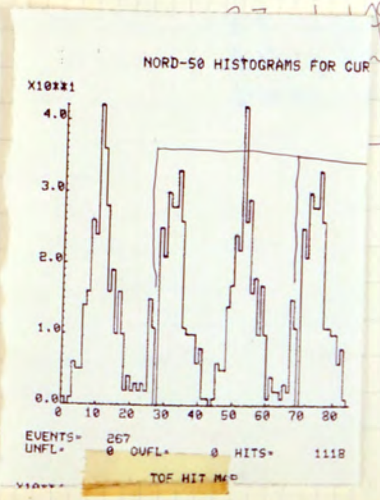
9.50 Run 19093 stopped, New N50 program now standard, Run 19094 started.
10:00 VTXC trip ?!
10:10 JDAS READOUT ERROR 53 - System Watchdog flag on PARM = ØØ6424 (oct)
10.47 " " 22 " (*) 33 - Missing LAM b 1 c 1 : Beampipe ch.
11.30 Run 19093 stopped - run summary lost. 1759 events transferred.
↳ DC found a bug! Howard squashed it.
(*) Run 19094 !?
12.00 Run 19095 PEDESTAL RUN TO IBM.
12.07 " 19096 Cosmics to IBM.
12.13 JDAS Readout Error 53 - - - - on PARM = ØØØ424 (oct)
12.18 " " " " " - - - - " " = ØØØ424 "
12:50 " " " 33 Missing LAM b1 c1 Beampipe chamber
13:05 " " " 53 System crate watchdog flag on PARM = ØØ3424
" " " " " " = ØØØ424 ← two times!
13:10 Run 19096 stopped
13:17 Run 19097 started VTXC-HV set to 1500/-1550
13:31 JDAS Readout ERROR 53 System crate watchdog flag on PARM = ØØ3424
13:36 -"- 33 Missing lam branch 2 crate 4 ; TOF2 counters
14:50 Magnet trip Reason PKR - People broke the interlock!
16:00 Run 19098 started, TOF Micros off
JDAS READOUT ERROR 56 - TOF bank wrong length = 165 (dec)
16:20 Run 19098 stopped due to Magnet trip (Reason PKR - People broke interlock again!)
"Short break" PKP - People changed power supply for interlock system
17:20 Run 19101 started (Runs 19099, 19100 no Evts)
17:45 JDAS-READOUT ERROR 53 System crate watchdog flag on PARM = 000424
15:30 " " " " " " " " " " " = ØØ3424
19:00 " " " " " " " " " " " = ØØ3424
20:20 " " " " " " " " " " " = ØØØ424
20:32 " " " 33 Missing lam br 1 crate 1 Beampipe Ch
21:10 Run stopped Mp 16 - Rejection - Flags had been set!! (Default value after Nord restart)
to switch flags off choose F15 (Micros-Ctrl) then F14 (Mp16-Rej-Flags)

Processors ON/OFF N50	MIP	TOF	FAMP	<L>	Bhabha $\int Ldt$	$\int Ldt$ exp, energy	IBM/Tape OUTPUT	At Run Start ID (μA)	TOF (V)	ONLINE REJ MIPROC T_2 %	NORD 50 T_1 & T_2 %	Σ_{Bhabha}	MH	E_{beam}	Mag. Field	Remarks

21:25 Run 19102 started
23:14 Enter: "DOWN" → no response, Data taking continued !? May be terminal hang up
23:20 Nord restarted Run 19102 ≈ 2100 Evts
23:28 Magnet off

6.3.85
08.15 NORD in STOP condition, restarted ok.
08.30 Magnet at 6400 amps.
08.40 Run 19106 started to IBM
09:48 JDAS READOUT ERROR 33 Missing Lam branch 1 crate 1 BPCH 2 times
11 15 RUN 19106 STOPPED — LG LOOKING NOISY.
RUN 19107 STARTED.
13:04 Run 19108 " New version of VTXC - Software loaded (V3) O.K.
JDAS Error 53 177424 × 4, 000424 × 1
" " 53 SYSTEM CRATE WATCHDOG FLAG ON PARM = 000424 (OCT) (3424) ~~||||~~ |||| |||| |
33 MISSING LAM BRANCH 1 CRATE 1 - BEAMPIPE ||||
53

17.41 TOF Counter Status:
TOF counter 14 on channel 29 at 2600 V works,
70 as well! → check how long
TOF counter 69 has no Anode signal; dynode is there.
→ trigger on 27 alone.
~~... does not give output. hole in TOF hit map at ... changed with 28, still no entries. Probably ...~~



~~Probably broken ...~~

JDAS ERROR 53 SYSTEM CRATE WATCHDOG FLAG ON PARM = 177424

TOF counter 70 also no Anode, trigger on 28 alone.
" 14 has tripped again, so trigger on 56 alone.

broken: 14, 27, 28.
(56, 69, 70)

RUN	DATE	START	STOP	AT RUN START I^+	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 $E_4 \geq 6$ GeV	T_2 BIT 17 2T· E_4 ·≥2TR

5.3 85 DC arrives 07.55 to find all doors locked! Is this necessary?
08.42 Start run 19093 to IBM.
Clock freq. - 49.158 MHz

[Peds
Logon HEU
Run @MAN
Run @DELRU]

9.50 Run 19093 stopped, New N50 program now standard, Run 19094 started.
10:00 VTXC trip ?!
10:10 JDAS READOUT ERROR 53 - System Watchdog flag on PARM = ∅∅∅424 (oct)
10.47 " " 33 - Missing LAM b 1 c 1 : Beampipe ch.
11.30 Run 19093 stopped - run summary lost. 1759 events transferred.
↳ DC found a bug! Howard squashed it.
Run 19094 !?
12.00 Run 19095 PEDESTAL RUN TO IBM.
12.07 " 19096 Cosmics to IBM.
12.13 JDAS Readout Error 53 - - - - on PARM = ∅∅∅424 (oct)
12.18 " " " " " - - - - " " = ∅∅∅424 "
12:50 " " " 33 Missing LAM b1 c1 Beampipe chamber
13:05 " " " 53 System crate watchdog flag on PARM = ∅∅3424
" " " " " " = ∅∅∅424 ← two times!
13:10 Run 19096 stopped
13:17 Run 19097 started VTXC-HV set to 1500/-1550
13:31 JDAS Readout ERROR 53 System crate watchdog flag on PARM = ∅∅3424
13:36 -"- 33 Missing lam branch 2 crate 4 ; TOF2 counters
14:50 Magnet trip Reason: PKR-People broke the interlock!
16:00 Run 19098 started, TOF Micros off
JDAS READOUT ERROR 56 - TOF bank wrong length = 165 (dec)
16:20 Run 19098 stopped due to Magnet trip (Reason PKR-People broke interlock again!)
"Short break" PKP-People changed power supply for interlock system
17:20 Run 19101 started (Runs 19099, 19100 no Evts)
17:45 JDAS READOUT ERROR 53 System crate watchdog flag on PARM = 000424
15:30 " " " " " " " " " " = ∅∅3424
19:00 " " " " " " " " " " = ∅∅3424
20:20 " " " " " " " " " " = 00∅424
20:32 " " " 33 Missing lam br 1 crate 1 Beampipe Ch
21:10 Run stopped M_p16 - Rejection - Flags had been set!! (Default value after Nord restart)
to switch flags off choose F15 (Micros-Ctrl) then F14 (Mp16-Rej-Flags)

Processors ON/OFF N50	MIP	TOF	FAMP	⟨L⟩	Bhabha ∫Ldt	∫Ldt Exp. energy	IBM/Tape OUTPUT	At Run Start ID (μA)	TOF (V)	ONLINE REJ MIPROC T_2 %	NORD SR T_1 & T_2 %	Σ Bhabha	MH	E_{beam}	Mag. Field	Remarks

21:25 Run 19102 started
23:14 Enter "DOWN" → no response, Data taking continued !? May be terminal hang up
23:20 Nord restarted Run 19102 ≈ 2100 Evts
23:28 Magnet off
6.3.85
08.15 NORD in STOP condition, restarted ok.
08.30 Magnet at 6400 amps.
08.40 Run 19106 started to IBM
09:48 JDAS READOUT ERROR 33 Missing Lam branch 1 crate 1 BPCH 2 times
11 15 RUN 19106 STOPPED - LG LOOKING NOISY.
RUN 19107 STARTED.
13:04 Run 19108 " New version of VTXC-Software loaded (V3) O.K.
JDAS Error 53 177424 × 4, 000424 × 1
" " 53 SYSTEM CRATE WATCHDOG FLAG ON PARM = ~~000424~~ 3424 (OCT) ~~||||~~ |||| |||| |
33 MISSING LAM BRANCH 1 CRATE 1 - BEAMPIPE ||||
53

17.41 TOF Counter Status:
TOF counter 14 on channel 29 at 2600 V works,
70 as well! → check how long
TOF counter 69 has no Anode signal; dynode is there.
→ trigger on 27 alone.
~~27 latch does not give output. hole in Tof hit map at 69. Interchanged with 28, still no entries. Probably latch broken.~~
~~Probably broken latch~~

JDAS ERROR 53 SYSTEM CRATE WATCHDOG FLAG ON PARM = 177424

TOF counter 70 also no Anode, trigger on 28 alone.
" 14 has tripped again, so trigger on 56 alone.

broken: 14, 27, 28.
(56, 69, 70)

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 $E_{L4} \geq 6$ GeV	T_2 BIT 17 2T. $E_4 \cdot \geq 2$TR

18:20 Run 19109 stopped due to short tests

18:35 Run 19110 started VTX-HV set to 1450/-1650

ERRORS 53 PARM = 000424 ||
000424 ||
117424 ||

" 33 Missing Lam br 1 crate 1 BPCH ||
br 1 " 3 BPCH

Evts | 2080 Run 19111 | 2153 Run 19112 | 450 Run 19114 | (5200) 902 Run 19115

33 Miss Lam CR5

19:48 Run 19110 stopped J. Olsson looks for "watchdog"-Errors (Debug-Mode)

20:30 Run 19111 started

22:20 Run 19111 stopped ; Magnet off

7.03.85

9:50 Magnet on

10:10 Run 19112 started VTXC-HV set to 1475/-1650

12:10 Run 19112 stopped Krebbiel performs some tests

12:32 Run 19113 started - stopped after few events, because VTXC-Readout had been disabled

13:03 Run 19114 started 15:32 Run stopped

13:35 VTXC-Processor 3 and 5 exchanged C.K.
Impossible to start (SYS) 7X99: ERROR with LO-61 (TI-Assembler)
Hard-Restart → O.K.

13:40 Run 19115 started

14:23 Run 19115 stopped HV down Magnet off due to request of W. Bartel (interlock-break)

14:53 Run 19116 started

18:36 Run 19116 stopped HV down Magnet off

8.03.85

9:25 Magnet on VTX-Micro Version 3 loaded. This Version has a delay to reduce the watchdog-Errors

10:00 Run 19117 started VTX HV changed to 1450/-1700 V

		Run 19117	19118	19120	19121
ERROR 53	PARM = 000424	||	|		|
	003424	||			
	147424	||		|	
ERROR 33	br 1 crate 1	||	|		
	br 1 crate 3				|
	br 1 crate 5	|			
	778 Events	801	1764		

Processors ON/OFF N50	MIP	TOF	FAMP	⟨L⟩	∫Ldt	∫Ldt exp. energy	IBM/Tape OUTPUT	At Run Start ID (μA)	TOF (V)	ONLINE REJ MIPROC T_2 %	NORD 50 T_1 & T_2 %	Σ Bhabha	MH	E_{beam}	Mag. Field	Remarks

12 35 Run 19118 started (VTXC-Processor: for Watchdog-Error-Debug Program with Delay loaded)

13 40 " stopped, New VTXC-HV : 1550/-2400 / +110

14 02 " 19120 started

17 07 " 19121 " " " " : 1500/-1550/0

Please Call Herta Matsumura when starting run.

Monday 11th March - Window in electronics room found to be lying inside room
Muon cathac crate Fan Fail HET

13:00 System Crate was down with overload.

Friday 15th March

Status. Gould plotter repaired - was a broken wire
YSPY terminal substituted by spare
New N50DAR program installed - in accordance with normal startup practice the RIAR2
Fast pattern recognition cut set to 350 hits (was 450).

To be done Monday morning

1) ~~: Use SET-EXP-PAR to set expno to 26, run no to 20000~~
2) ~~Back discs up (if PETRA allows)~~
3) Get new folder for std histograms. HET
4) Hope that everything works

19 22 RUN 19122 with VTXC-Pulse-Data to TAPE JDAS01

19 42 " 19123 " " " "

Saturday 16/3/85

16.20 RUN 19124 with VTXC-Pulse-Data to Tape JDAS01

16.50 RUN 19125 " " " " " "

Sunday 17/3/85

17.00 Exp & Run number changed. Disc backed up. HET

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 $E_{LG} \geq 6$ GeV	T_2 BIT 17 2T · E_4 · → 2TR

here actually 1985 data taking starts

Monday 18/3/85 W. Bartl & J. Chrin on shift

7.50 Terrible noise in control room → bad glass trigger power failure, unit in Rack #6 says "fan fault" after switching off and on again it works. (HJ)

8.00 Message from PKR : No action required before lunch

11.00 Lg-trigger ~~fault~~ fault caused by Kawagoe, bad contact of a cable

We have now low pressure in the JADE hall:
The reason for the low pressure was caused by the Petra ring tunnel heating. Petra was running at 7 GeV all the time, thus the magnets and power leads do not dissipate enough heat and additional warm air is sucked ~~in~~ out of the experimental halls and is blown into the tunnel.
H-purple increased the flow of air from outside into the JADE hall.

11.30 New YPARA installed and tested C.K.

11.35 dead glass "Stromversorgungs - Zentraleinheit für Blei-glas trigger" (bottom last one in rack 6) → fan failure alarm.

12.00 Another failure of power supply for Lg-trigger : fan failure
switching power on and off cures it. This unit needs some repair!

12.45 VTXC-Processor in crate 5 replaced by spare C.K.

Agreement at the JADE-meeting on March 14.

Magnet current : $I = 6300$ Amps

16.00 D. Haidt and H. Riesberg

17.05 Tasso asks for access for ½ hour → Will be tomorrow at 9 a

17.40 $I^+ = 2.32$, $I^- = 1.55$, $E = 20.034$ GeV Call from PKR : They will stay at this energy for some time to clean vacuum

17.49 Beams lost.

18.00 K. Kawagoe and S. Komamiya exchanged the Fanunit of Zentraleinheit "Stromversorgung" of Bleiglastrigger

Processors ON/OFF N50	MIP	TOF	FAMP	<L>	Bhabha ∫Ldt	∫Ldt exp. energy	IBM/Tape OUTPUT	At Run Start ID (μA)	At Run Start TOF (V)	ONLINE REJ SUM MUPROC T_2 %	ONLINE REJ NORD SQ T_1 & T_2 %	Σ_{Bhabha}	MH	E_{beam}	Mag. Field	Remarks

$I^+ = 2.2$ $I^- = 0.95$ $E_b = 17.372$ 18^{20} – 19^{15}

$I^+ = 2.0$ $I^- = 1.7$ $E_b = 20.017$ 19^{55} –

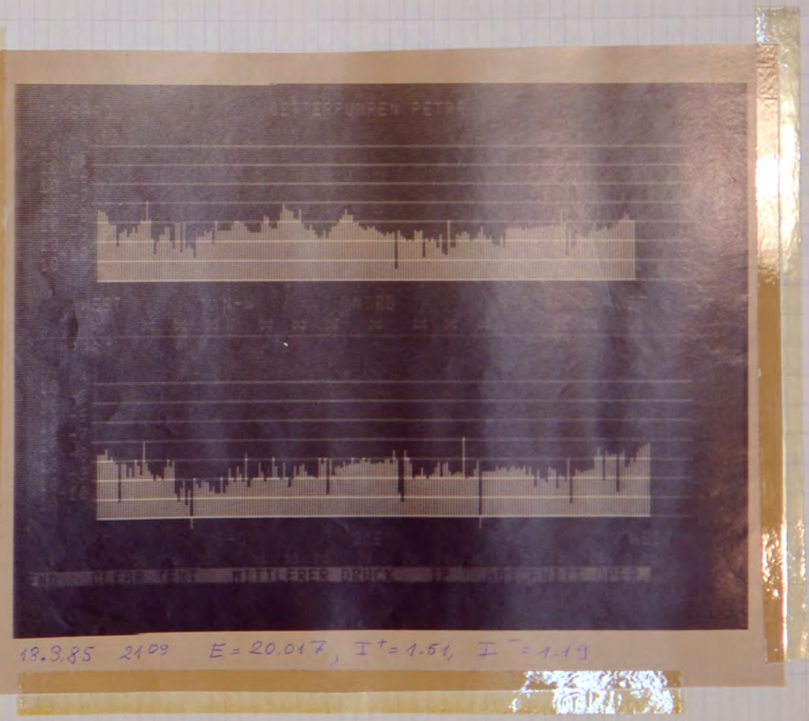
$I^+ = 1.5$ $I^- = 1.2$ " " 21^{20} (same filling) – 21^{40}

$I^+ = 2.25$ $I^- = 2.02$ $E_b = 21.800$ 22^{15} (4th filling) —

It is the intention to improve the vacuum by heating with the beam all over the night.

$I^+ = 1.96$ $I^- = 1.75$ $E_b = 21.802$ 22^{57}

23^{29} "Short Break" announced by PKR : Leak problem lasting at least 2 hours



18.3.85 21⁰³ $E = 20.017$, $I^+ = 1.51$, $I^- = 1.19$

RUN	DATE	START	STOP	AT RUN START I^+	AT RUN START I^-	DEAD TIME (%)	TIME (sec)	RECORDS IN	RECORDS OUT	ALL $\times 10^6$	$T\phi$ REJ $\times 10^6$	T_1 ACC SUM	T_2 ACC SUM	T_1 Bit 2 $E_4 \geq 6$ GeV	T_2 BIT 17 $2T \cdot E_4 \cdot \geq 2TR$

19/3/85 0.00 C Bowdery on shift (Sachio will come at 04:00)

2.00 PKR announce Vacuum Leak Restart not before 12:00
Magnet off.

I think I have mastered the simpler functions of the telephone!

7:45 Nobody in the control room! because of the vacuum leak

8:00 G. Weber and K. Kawagoe on shift

9:25 Phone Call from Bürger (coordinator): no need to man experiments during the next 24 hours; trouble with PETRA vacuum will hopefully be cured by to-morrow noon; we will get further instructions to-morrow morning;

11-16 h Cosmic Runs with detector fully on (B = -4090 G), DATA NOT WRITTEN, to investigate watchdog errors and ID behaviour. G.K. and Rbg
Muon Crate 6 cannot be reset

17^{00} gas-check O.K. R. Felst
20^{30} everything looks normal here – except for "Achtung der Magnetstrom wird eingeschaltet" but restart still 20.3. 7^{00}
23^{30} everything still normal – restart unchanged → 7^{00} 20/3 R. Felst
Also checked in gas house and all is OK (I have not entered any readings onto sheet) K Stephens

20.3.85
7.00 Everything looks okay; restart probably not before midday. Kuhlen

Processors ON/OFF N50	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)	TOF (V)	ONLINE REJ SUB MIPROC T_2 %	NORD SQ T_1 & T_2 %	Σ Bhabha	MH	E_{beam}	Mag. Field	Remarks

20.3.85
8.00 S. Cartwright + H. Kado on shift
9^{20} TV says INJECTION — can this be true?

9^{30} Muon Test Run – all chambers (& crates) O.Kay. Should crate 6 (or any other crate for that matter) go permanently missing again & you are unable to reset it either in the hardware room or at the crate itself – then call Manchester on-call personnel. SC.

12^{20} Suddenly red light flashes and inner detector/vtx chamber/zch alarms all go off at once. Also error messages from YMAGNT. Power glitch?
12^{30} YMAGNT error messages stopped by switching them off (after consultation with Howard). Will have to switch them on again when magnet switched on though!
12^{45} Riesberg says ID power supply will have to be changed. He will do it after lunch.
13,00 VTXC HV-settings changed to standard settings due to power glitch. Reset to +1500/+200/-1648 ≙ +1500/+180/-1550
13^{30} Power glitch had no effect on muon filter – histograms O.Kay. SC.

13,45 obviously the power glitch set the beampipe temperature alarm, so PETRA could not inject! no acoustical alarm indicates this situation here or in the hardware-room. (only a very tiny lamp at the bottom of Rack #21 was set) The acoustic alarm is reserved for the real case. U. Bec.

15^{30} YMAGNT message cured by EXIT from JDAS and restart.
15^{50} We have 21.8 GeV (the good news) – the currents are 1.4 and 0.7 mA for e^-, e^+ (the bad news!)

16^{00} Dieckmann + Schmidt on shift.

16^{30} Gas check was done → ok

18^{10} PKR: beams not before 22^{00}.

RUN	DATE	START	STOP	AT RUN START I^+	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 $E_{LG} \geq 6$ GeV	T_2 BIT 17 2T·E_4·≥2TR

21. 3. 85 K. Kawagoe on shift (H. Krehbiel will come at 4:00)

now : beam energy = 21.800 GeV , $I_+ = 2.20$ mA , $I_- = 0.76$ mA

04[00] Krebbiel

21/3-85 8[00] Haidt & J. Spitzer on shift

13[00] on Krehbiel's advice, the following trigger words for standard runs are active:

T1 Accept: 175417 (oct) (A8-9) T1 Postpone: 071615 (oct) (A10-11)

T2 enable: 007777 (oct) (A12) T2 coincidences: 050777 (oct) (A13) J. O.

14[45] Gas checked

16[00] N. Magnussen on shift

16[25] Call from PETRA control: 'Please switch magnetic field on'

Magnet current set to 6300 A

16[38] Another call from PETRA control (Kaiser): They have seen a huge effect on the beam with the JADE magnet on. He asks to switch it off again. → B off

16[45] Again PETRA control: No correlation seen while switching off ; coincidence , sorry , please go to operating B again → B = 6300 A

18[50] Luminosity run , high TOF rate

19[00] E. Elsen on shift too

20[15] set VTX-chambers anode voltage to 1400 V (was 1500 V) (advice by K. Kleinwort)

20[50] Beam loss.

21[30] Gas check . ok.

22.3.85 0[00] Ambrus u. Ramcke on shift

0[08] Gas checked

3[00] Luminosity run , ~~TOF~~ high TOF rate

4[20] TOF-rate: 3,2 V ; ID-current 1,9 μA

tried to start run 20000

soft trip after a few seconds! High TOF-rate again (4,0 V)

4[30] beams lost

8[00] Stephens + Kleinwort on Shift

8[05] Short break due to water leakage in the N-hall

?[30] Gas checked

Processors ON/OFF N50	MIP	TOF	FAMP	<L>	Bhabha ∫Ldt	∫Ldt exp, energy	IBM/Tape OUTPUT	At Run Start ID (μA)	TOF (V)	ONLINE REJ SUM MIPROC T_2 %	NORD 50 T_1 & T_2 %	Σ_{Bhabha}	MH	E_{beam}	Mag. Field	Remarks

22/3/85

10[30] IBM link will be interrupted for ~1 hr.

11[25] We have beams — At the correct energy as well

Tof rate ~ 8-10 V.

PKR are adjusting the beams

11[30] IBM link re-established.

12[00] TOF rate still too high ~ 4→5 V.

Hans Krehbiel cheaks the tof system and finds nothing wrong

12[15] talk to PKR ~~[illegible]~~ they are still trying to reduce our background — we are the only region with a bad background.

We decide with Roseberg's presence to switch the JET chamber, Z and Vertex chamber

We try to start run but one of TOF processors doesn't respond

TOF-rate 4.5 V ID-current 1.4 μA (TOF rate alarm switched off)

$I^+ = 3.2$, $I^- = 3.55$

Triggerrate 7.8 Hz! over 15% events are too long

In TOF hit map, 4 counters are missing (0, 1, 42, 43) - If they are known to be OFF please inform me (HEM) & I will set SPY-MASTER accordingly.

Crate 12 of Twon system does not respond.

TOF AC2091 does not work - running with TOF processors off.

Synchrotron radiation hit count looks acceptable.

Missing LAMS from Beampipe chamber every ~500 events

Data taking stopped - NO Triggers but trigger box had one event ready. Could not reach J.O.

So tried PAUSE/CONTINUE - it worked HEM

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 · $E_4 > 2$TR
EXP 26															
20002									807						
20003	22.3.85	17.55	18.13	3.10	2.81	16.2	1032	4353	2084	268	43	2218	1119	506	14
20004	23.3.85	11.44	11:47	3.50	3.88	78.5	155	667	559	40	32	151	0	47	1
20005	Junk														
20006	23.3.85	12^{17}	12^{30}	3.14	3.52	56.6	747	2622	1849	194	110	1334	?	410	11
20007	"	12^{39}	13^{17}	2.95	3.31	39.7	2255	8002	5151	587	233	4527	?	1312	34
20008	"	13^{17}	13^{25}	2.63	2.98	42.7	410	1304	807	107	46	747		218	8
20009	"	13^{29}	13^{57}	2.55	2.89	31.0	1683	6024	3886	438	136	3644		784	32
20010	"	14^{00}	14^{19}	2.35	2.67	25.6	1140	4368	3043	297	76	2807		467	20
20011	"	17.30	17.39	3.84	3.85	64.9	61	232	158	15	10	106	2	21	0
20012	"	17.39	18:19	3,73	3,73	38,6	2352	8002	5624	612	236	5637	?	1233	43
20013		18.19	18.34	3.20	3.27	26.8	879	2929	1879	229	61	1694	0	401	15
20015	"	21.04	21.18	3.75	3.64	45.2	144	449	306	37	20	253	0	53	2
20016	"	21.19	21.32	3.61	3.51	28.0	721	~~2528~~	1600	200	56	1407	0	318	12
20017	"	21.45		3.25	3.19										
20019	"	22.38	22.49	2.80	2.76	16.4	629	2370	2006	163					
20021		23.01	23.05	2.64	2.60	17.5	191	758	607	49	87	341	—	71	1
20022	24.3.85	1.20	1.53	3.98	4.00	41.5	2310	8001	6105	601	250	4061	0?	1037	63
20023	"	1.53	2.40	3.50	3.57	27.6	2446	8002	5624	628	173	4456	0	1013	58
20024	"	2.41	2.59	2.96	3.16	20.0	1006	3109	2056	262	52	1810	0	407	18
20025	"	8.40	9.12	~~2.46~~ 3.20	~~3.06~~ 3.30	22.7	1923	8002	7367	500	113	6414	0	800	23
20026	"	9.14	9.16	2.95	3.04	18.0	73	365	223	19	3	277	0	45	0
20027	"	13.55	14.05	3.72	3.57	28.4	318	1260	866	83	24	768	0	225	53
20028	"	14.06	14.48	3.65	3.50	26,2	2532	8002	7416	659	173	4873	0	1114	47 ~~398~~
20029	"	14.49	15^{33}	3.28	3.16	19.8	2616	8002	5130	681	135	4445	0	1088	37
20030	"	15^{33}	16^{08}	2,95	2,85	18.8	2063	5588	~~3539~~	536	101	3492	0	737	34
20031	"	17.51	18.30	4.11	4.05	28.0	2045	7213	5130	532	149	4041	0	875	45
20032	"	18.50	18.58	3.45	3.42	23.1	452	1663	1185	118	27	882	0	170	6
20033	"	21.13		?	?										
20034	~~25~~ 3.85	1.04	1.18	3.44	4.18	43,2	742	2580	1615	193	85	1122	0?	227	"
20035	"	2.50													
20036	"	3.41	4:00	2.91	2.74	14.9	1090	3567	1901	283	42	1766	0	309	6
20037	"	5:35	6:21	4.60	4.75	52.3	2324	8002	5345	667	317	3298	0	768	31
20038	"	6:21	7:00	3.98	4.07	47.6	2230	7447	4836	580	276	3167	0	710	33
20039	"	7:02	7:05	3.47	3.63	37.3	159	617	405	~~41~~ 401	15	264		69	20

Processors ON/OFF N50	MIP	TOF	FAMP	<L> 10^{30} cm^{-2}sec^{-1}	Bhabha $\int Ldt$ nb^{-1}	$\int Ldt$ Exp. energy	IBM/Tape OUTPUT	At Run Start ID (μA)	At Run Start TOF (V)	Online Rej MIPRoc T_2 %	Online Rej NORD-50 (T_1 & T_2)%	Σ Bhabha	MH	E_{beam}	Mag. Field −1.4 Gauss	Remarks
ON	ON	ON	OFF	0.62	0.64	0.64	IBM					6	0	21.8	4073	VTX off
"	"	"	"	0.24	0.04	0.68	"	2.6	3.5	0	20	0	0	"	4080	VTX 1400V
"	"	"	"	0.37	0.27	.95	"	2.0	3.0	?	34	8	0	"	4079	
"	"	"	"	0.42	0.95	1.90	"	1.6	3.0		40	16	0	"	"	
"	"	"	"	0.20	0.08	1.98	"	1.4	2.3		42	1	0	"	4080	
"	"	"	"	0.42	0.71	2.69	"	1.6	2.2		37	8	1	"	4081	
"	"	"	"	0.45	0.51	3.20	"	1.4	2.0		33	5	0	"	4079	Beams dumped
"	"	"	"	0.53	0.09	3.29	"				40	1	0	"	4079	hang-up
"	"	"	"	0,60	1,41	4,70	"	2.0	4.0		32	15	1	"	4079	normal end !
"	"	"	"	0.65	0.90	5.50	"				39					
"	"	"	"	0.71	0.0	5.50	"				36	0	1	"	"	ID trip
"	"	"	"	0.67	0.27	5.77	"				40	3	0	"	"	" "
"	"	"	"													
				0.44	0.27	6.04	"				20	3	0	"	4061	Bad FV structure @ end } Z-veg off
"	"	"	"	0.44	0.00	6.04	"				22	0	0	"	"	beams lost }
"	"	"	"	0,72	1,77	7.81	"	2.0	3.0		27	20	2	"	4061	
"	"	"	"	0,85	1.50	9,31	"	1,0	2.4		32	17	0	"	4060	
"	"	"	"	0.62	0.62	9.93	"	1.9	1.8		37	7	0	"	"	TOF-HV-Failure
"	"	"	"	0.60	1,15	11.08	"	~3	~3		41	11	0	"	4055	" TOF-MER 55 : off
"	"	"	"	0.44	0.00	11.08	"				44	0	0	"	4057	" "
"	"	"	"	0,74	0,27	11.35	"	1.3	2.0		34	3	0	"	4057	
"	"	"	"	0.75	2.21	13.56	"	1.0	1.8		36	25	2	"	4058	
"	"	"	"	0.63	1.50	15.06	"				38	17	0	"	4057	
"	"	"	"	0,99	1.02	16,08	"	0.9	1.4		39	6	0	"	4054	beam lost
"	"	"	"	1.13	1.33	17.41	"	1.0	2.5	0	32	15	0	"	4053	beam lost
"	"	"	"	0.88	0.27	17.68	"			0	32	3	0	"	4055	
																Faulty CC41 ?
"	"	"	OFF	0,78	0.58	18.26	"	1.0	1.5^4	0?	40	6	0	"	4055	beams lost
								0,8	1.4						4055	MP-16 errors
"	OFF	"	"	0.54	0,59	18.85	"	0.8	1.0	0	43	11	0	"	4053	MP-16 OFF ! beams dumped
"	OFF	"	OFF	0.86	2.02	20.87	"	1.2	2.0		36	12	1	"	4056	"
"	OFF	"	OFF	0.74	1.66	22.53	"	0.6	1.7		38	16	2	"	4051	" VTX 1450V
"	"	"	"	0.61	0.10	22.63	"	0.6	1.7		38	4	0	"	4054	" beams lost

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 $E_{LG} \geq 6$ GeV	T_2 BIT 17 $2T \cdot E_{LG} \cdot \geq 2TR$

Processors ON/OFF N50	MIP	TOF	FAMP	<L> 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 MIPROC T_2 %	ONLINE REJ NORD 50 T_1 & T_2 %	Σ_{Bhabha}	MH	E_{beam}	Mag. Field	Remarks

36 22/3/85

13^{00} Leadglas trigger too often, could not read any sequence ← Did you try hard enough? There are more than 100 million.

13^{20} Host-hangups on Level 9 (occasionally Level 12 active)
After restart: DATA ERROR 56 – TOF bank wrong length = 172 (dec)
45 – MP-16 analysis incomplete YY = 1

$I_+ = 2.45$ $I_- = 2.75$
Tof-rate 2V, $I_{10} = .9\ \mu A$

13^{40} 53 – Watchdog flag 000424 140204 //
33 – Min. beam br 1 41 ### 1

14^{00} 52 – Run paused control word 000000
pressed continue, but no events ..., pause + continue still no events .., beams lost -> DOWN

14^{45} Crate 12 of muon system now responds.

The TOF rate is roughly a factor 6 higher (with respect to the ID mean Anode Current/wire) than at the end of last year. To make data taking possible I increase the TOF rate threshold (for the ID soft trip) from 3V to 6V. The threshold must be reset to the old value when the TOF rate becomes normal again Rlg

16^{00} Naroska & Chin on Shift.

16^{00} Gas checked.

LG trigger thresholds were checked. I found nothing wrong. K.K.
Changed TOF TDC crate 3, Stn 9. Did not give any values. Now ok.

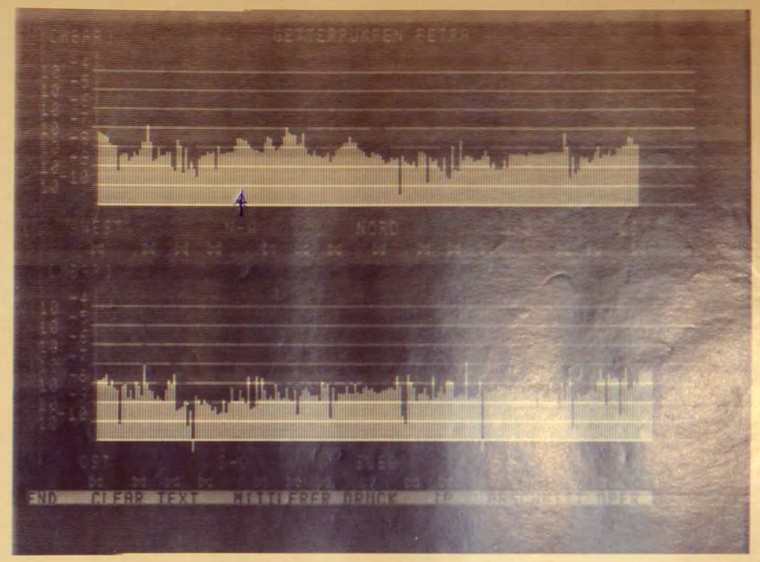
17.00 Start a run to IBM, 20003, Vtx chamber off because Petra is optimizing. Rates more or less normal, 3.1 / 2.8 mA.

In the beginning of the filling all leadglas rates were high, probably due to background. No electronic fault found.

TOF rate started at about 6V and gradually went to 2V. during fill
Vtx chamber tripped so often, that we decided to leave it off. ID Switch off threshold was decreased.)
Then you have to start with "Any test" if you don't want to have lights flickering.

37

Compare with page 71 in Log Book XIII



$e^- = 3,4$ mA
$e^+ = 3,0$ mA
$E_{beam} = 2,80$ GeV

22.3.85 16^{50}

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 $E_{LG} \geq 6$ GeV	T_2 BIT 17 $2T \cdot E_T \cdot \geq 2$TR

Processors ON/OFF N50	MIP	TOF	FAMP	<L> 10^{30} cm^{-2}sec^{-1}	Bhabha ∫Ldt nb^{-1}	∫Ldt exp. energy	IBM/Tape OUTPUT	At Run Start ID (μA)	TOF (V)	ONLINE REJ MUPREC T_2 %	NORD SEC T_1 & T_2 %	Σ_{Bhabha}	MH	E_{beam}	Mag. Field	Remarks

38 22/3/85

Plan for the night: Try to take data and understand and note problems for the "experts" during daytime. Don't call them in the middle of the night.

23.00 Petra has been injecting for 2 hours. When Key arrived at 16 GeV with ~2×4 mA they lost the beams.

23[00] gas checked.

~~[illegible]~~

23[30] News from PKR: They have lost the use of several magnets (power supply failures). Hence NO injection possible in the immediate future.

23 March 0001. Heinzelmann + Murphy.

No beam.

TV display disappears; restart NORD several times with no effect. J. Chin tries various buttons on JDAS console and the TV lights up again.

0250 "Break" to at least 0700. 10RV supply in PETRA has failed and no expert is available. Magnet off.

7:20 Injection. Magnet current → 6300 amps.

8[00]–16[00] Hughes + Yamada

8[30] PETRA gives a high background. TOF rate >> 10V. (The meter "over flows".) PKR says "It is difficult to adjust for JADE since the given signal does not show which way to go." But they will try. Maybe it is useful to extend the maximum range of the TOF rate meter to 25V.

9[15] TOF rate reduced substantially. ~4V now. PKR found that the beam orbit was distorted around the JADE position.

9[40] TOF rate ~3V

9[42] Beams lost.

9[44] injection

11[35] Now fill ready. TOF rate ~3.4V, ID current 2.6 μA. Was the TOF counter threshold lowered? TOF rate is too high compared to the ID current. (see P.36 1488)

23/3/85

39

12[17] Run 20006 trigger rate ~8–9 Hz, dead time 30–60%. LG-total. LG-Barrel trigger rates are high. We will watch for some time.

JDAS readout error 52. Run paused control word 000000. no trigger after "continue".
VTX chamber soft trip, → HV. on again.
still "no trigger". → Run terminated & restarted a new one.

JDAS system watching error 53 ...

? to Howard. "T2 sum" in the run summary table looks wrong. ie always ∅.
JDAS Readout error 33 missing LAM branch 1. crate 1. ~~4~~ twice.
+ " " " 52 Run paused cont. word ∅∅∅∅
+ The last error is accompanied by VTX ch. soft trip. It happened before too. Are these two related? After switching the high voltage on, "No trigger" alarm. pause+cont-op. does not help. Only starting a new run could cure the problem.

13[40] JDAS error 33 missing LAM. br. 1. cr. 1. X4.

14[30] Tagg adc histograms all empty — Cause? — Someone had removed the A2 controller and substituted an A1; A2 Controller replaced by J. Olsson

16.00 H. Wills + B. Naroska
Check of gas-system

16.40 Lumi run TOF 5V, G. Hughes and J. Olsson are closing the TAGG bank, which has disappeared.

18[20] IBM Busy, 30 sec -, 20 sec,

19.48 Petra lost beams due to pilotburn – switchoff
Now ramping again.

20.00 beams lost

20.30 Nearly there again.

21.10 We get a multihadronic event (Genuine)!

23.00 Ashed for new filling in ~½ hour

23.07 beams lost
"Short break"

Situation of experiments:
Cello: starting to take data background no problem
TASSO: taking data unusually no background problem
Mark J: Extremely high backgr. don't know source. Take data anyway.

RUN	DATE	START	STOP	AT RUN START I^+	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 $E_{L4} > 6$ GeV	T_2 BIT 17 2T· E_4 ·≥2TR

Online Computer status/agony column

1) The detection of HV trip / beam loss works but the reason for run pause is not properly transferred.
Hence if JDAS ERROR 52 occurs, there will be a dump of CONZR. NO NEED TO WRITE THIS DOWN!

Also the automatic PAUSE of run does not work - So you must press PAUSE yourself!

2) At the end of run 20019 there were several BAD EVENT STRUCTUREs (found by the NORD-50 & the IBM online job. This was cured by stoping the run and reloading the MIPROC-16.

24.3.85

0^{00} Schmidt und Kleinwort on shift

0^{20} Gas check was done ⇒ ok.

0^{35} Printout from the Gould-plotter but no command was given.

1^{03} New fill. TOF rate very high ~ 8V

1^{20} Run 20022 started. TOF ~ 3V dead time ~ 60%

1^{23} JDAS error 33 missing LAM branch 2 crate 4 : TOF2 counter

JDAS error 45 MP-16 analysis incomplete : YY = *

1^{35} JDAS error 52 watch dog flag PARMS = ØØØ424 14Ø204 2x

33 missing LAM branch 1 crate 1 beam pipe chamber 5x

53 watch dog flag PARMS = ØØ 1Ø24 14Ø2Ø4

1^{53} Start Run 20023

JDAS error 33 missing LAM branch 1 crate 1 beam pipe chamber in 10 minutes 7x

53 002024 140204

2^{35} JDAS error 46 MP-16 out of sequence : YY = 1

53 000424 140204

2^{41} Start Run 20024

3^{00} Problems with TOF-HV

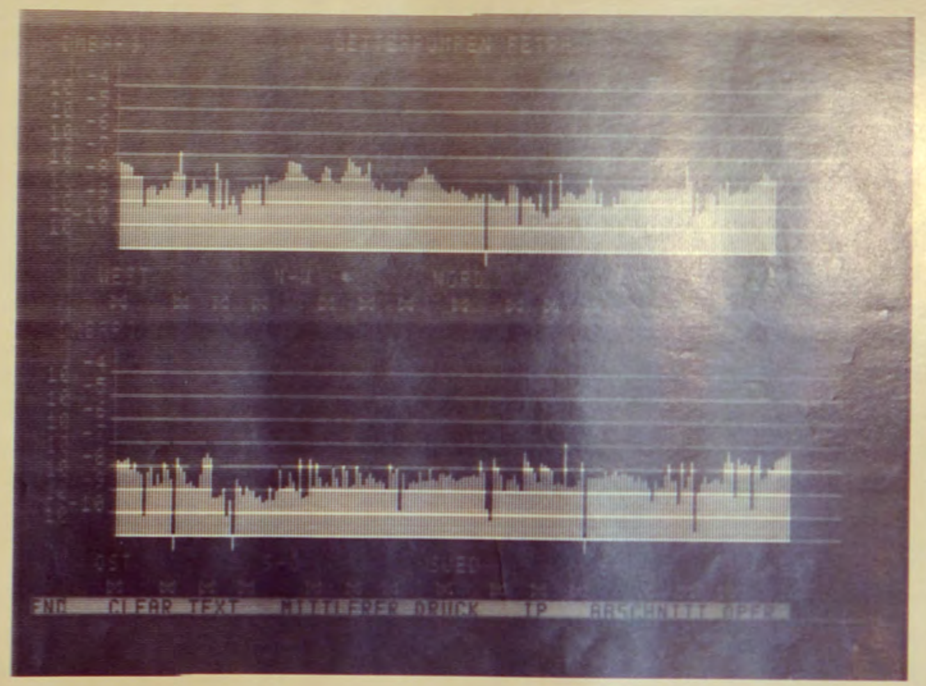
3^{23} beam dumped

Processors ON/OFF N50	MIP	TOF	FAMP	⟨L⟩ 10^{30} cm^{-2}sec^{-1}	Bhabha $\int L dt$ nb^{-1}	$\int_{exp, energy} L dt$	IBM/Tape OUTPUT	At Run Start ID (μA)	TOF (V)	ONLINE REJ SUM MIPROC T_2 %	NORD 50 T_1 & T_2 %	Σ_{Bhabha}	MH	E_{beam}	Mag. Field	Remarks

24/3/85

3^{37} Short break due to pilotbeam - switch off

7^{10} beams ready, still not possible to switch on TOF-HV



$I^+ = 3,9$ mA
$I^- = 3,9$ "
$E_{beam} = 21,8$ GeV 23.3.85 21^{00}

RUN	DATE	START	STOP	AT RUN START I^+	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 $E_{L4} > 6$ GeV	T_2 BIT 17 2T · $E_4 \cdot \geq 2$TR

Processors ON/OFF N50	MIP	TOF	FAMP	<L> 10^{30}	$\int L dt$ nb^{-1}	$\int L dt$ Exp, energy	IBM/Tape OUTPUT	At Run Start ID (μA)	TOF (V)	ONLINE REJ SUM MIPROC T_2 %	NORD 50 T_1 & T_2 %	Σ Bhabha	MH	E_{beam}	Mag. Field	Remarks

24/3/85

7 20 We can't switch on the HV. Error massage HV-TOF alarm. We cannot reset it. MFR 55 is not ok. No spare unit is availabel.

800 G. Hughes + S. Komamiya

839 Run 20025 started without TOF's (those connected to H.V. MFR 55)
JDAS readout error 53. System crate watching flag PARMS = 002024 140204 (out) — ⊛
846 JDAS readout error 45 – MP-16 analysis incomplete; yy=1
847 JDAS readout error 33 – Missing LAM branch 1 crate 1: Beam pipe chamber
848 ⊛ occurs every ~ 5 minutes
900 Missing LAM for beampipe chamber occurs every ~ 3 minutes
915 JDAS readout 52 run paused control words 000000 ⟸ Beams lost.
920 "Short break" on T.V.
956 "transmitter down restart: as soon as possible" on T.U ??

10.30 TOF HV POWER SUPPLY 55 was apparently broken (according to manual the low voltage 38 V must be broken).
We took new mainframe and got it working after 1.5 hours.
I leave HV on.
DON'T FORGET TO TURN OFF, WHEN PETRA STARTS INJECTING. B. Naroska.

11 20 No positron PIA down; restart: 2 pm

12 30 Injection: Tof HV Turned off; Monitor re-enabled; control reconnected.

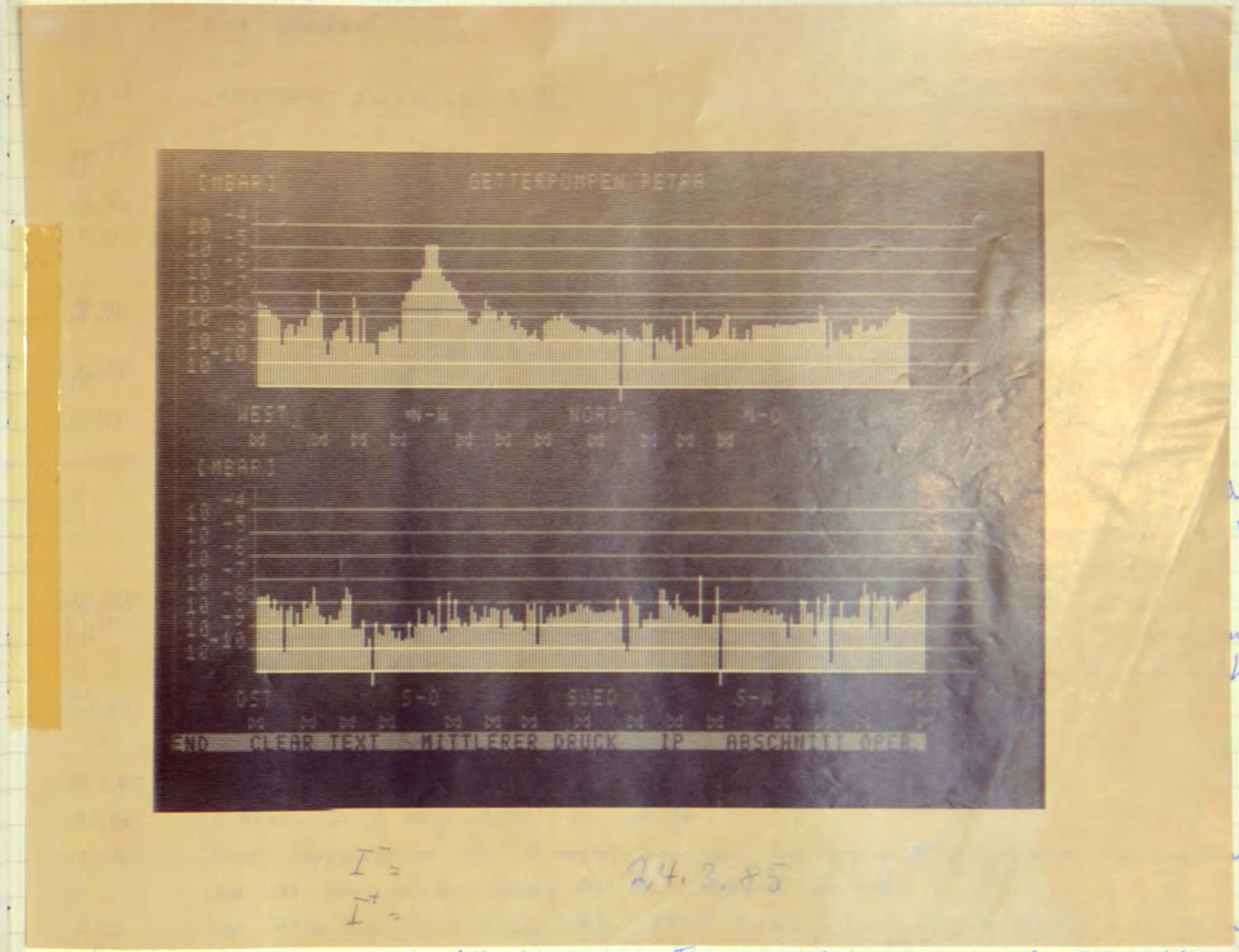
13 55 MFR 55 – Tof power supply failed to switch on – all volts zero
Reset using NAR @ TOF

1400 Start Run 20027
"Temperature alarm" phone to MKK3 nobody is there!
reset: TOF H.V. MFR=53 CHANNEL = 1. HV = 0.395 should be 2.750

1410 TOF HV MFR=53 CHANNEL=1 off again ~~reset~~ ⟸ MFR=53 was offline! now O.K.

24/3/85

14 10 Missing LAM Br=1 Cr=1 B.P.C. several times
14 40 No trigger PAUSE/Continue → looks OK
16:00 Loebinger and Kawagoe on shift //
16 11 beam lost
16 33 short break



... on TOF
... mit
... NAR @ TOF.

...us: Completely corrupt
Krehbiel + LAMTest.

...mary?

...any 46.

Try to load MP-16. Still the same. Test run without MP-16 reveals DL8-problem in ~~crate~~ 7, crate 1.
After fixing the MP-16 still gives JDAS READOUT errors 45/46. Test running without MP-16 works.
3:30 Reload NORD, MP-16 does not work...

RUN	DATE	START	STOP	AT RUN START I^+	AT RUN START I^-	DEAD TIME (%)	TIME (sec)	RECORDS IN	RECORDS OUT	ALL $*10^6$	$T_\emptyset$ REJ $*10^6$	T_1 Acc SUM	T_2 Acc SUM	T_1 Bit 2 $E_{LG} \geq 6$ GeV	T_2 BIT 17 $2T \cdot E_4 \cdot \geq 2TR$

24/3/85

7^{20} We can't switch on the HV. Error massage HV-TOF alarm. We cannot reset it. MFR 55 is not ok.
No spare unit is availabel.

8^{00} G. Hughes + S. Komamiya

H.V.

8^{39} Run 20(
JDAS readout error
8^{46} JDAS rea
8^{47} JDAS rea
8^{48} ⊛ occ
9^{00} Missing (
9^{15} JDAS r
9^{20} "Short
9^{56} " trans

10.30 TOF H
to manual
We took
I leave
D
U

11^{20} No posi

12^{30} Injection

13^{55} MFR55

14^{00} Start R
"Temp

reset : TOF H.V. MFR = 53 CHANNEL = 1. HV = 0,395 should be 2.750

14^{10} TOF HV MFR=53 CHANNEL=1 off again ~~reset~~ ⇐ MFR=53 was offline!
now O.K.

Processors ON/OFF N50	MIP	TOF	FAMP	⟨L⟩ 10^{30} cm^{-2}s^{-1}	Bhabha $\int Ldt$ nb^{-1}	$\int Ldt$ exp, energy	IBM/Tape OUTPUT	At Run Start ID (μA)	At Run Start TOF (V)	ONLINE REJ MIPROC T_2 %	NORD 50 T_1 & T_2 %	Σ_{Bhabha}	MH	E_{beam}	Mag. Field	Remarks

24/3/85

14^{10} Missing LAM Br=1 Cr=1 B.P.C. several times
14^{40} No trigger PAUSE/Continue → looks OK
$16^{:00}$ Loebinger and Kawagoe on shift //
16^{11} beam lost
16^{33} short break
Gas checked.

17^{35} ~~Luminosity~~ Switch on H.V.

17^{37} ~~All chambers~~ HV for all chambers tripped.
17.50 Run started.
18.05 Vertex chamber trip. - Reset OK.

18.30 ID & Z-chamber & V.C. tripped. Run stopped.

18^{58} beam lost.
17.40 Short Break. "Netz Gerät".
20.50. New beam. Tried to switch H.V. on but had failure on TOF
Mainframe 55. Eventually cured by switching mains OFF on the unit
waiting a couple of minutes and reloading the disk values via NAR @ TOF.

22.28 beam lost
23^{00} The evening fill could not be used due to a faulty CCA1 in Br 3:4. Symptoms: Completely corrupt
CAMAC, no readout worked. System rebuilt, false suspicion. Error finally found by Krehbiel + LANTest.
23.10 "Short Break"

25.3.85
0:00 E. Elsen & J. Hagemann on shift
1:36 What happened to the T2-accept sum and the μ-proc rejection rate in the run summary?
DL8 191 gave problems during last run. Cleaned contacts.
2:50 Get MP-16 analysis incomplete YY=0 errors. JDAS READOUT 45 followed by many 46.
Try to load MP-16. Still the same. Test run without MP-16 reveals DL8-problem in Branch 7, crate 1.
After fixing the MP-16 still gives JDAS READOUT errors 45/46. Test running without MP-16 works.
3:30 Reload NORD, MP-16 does not work...

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 $E_{L4} > 6$ GeV	T_2 BIT17 $2T \cdot E_4 \cdot \geq 2TR$

25/3/85

3⁴⁰ Continue datataking without MP-16.
VTXC HV since Run 20038 1450/-1550 V [HAG]

7⁰⁵ Beam loss.
"Kurze Unterbrechung" to last < ½ h.

7⁴⁵ Talked to J.O. about MP-16. He suggests rebuilding ZMONX, but that does not cure the problem.
He will be in at 9⁰⁰ - 10⁰⁰ today.
We have to run without MP-16 (if we get beam).

8⁰⁰ J, A.S. Skand } on shift P. Murphy replaced J. Chrin at 1045.
+ J. Chrin/P. Murphy }

8⁴⁵ Reset magnet current to 6300A. It was a bit low...

9⁰⁰ Cas checked.

10³⁰ Luminosity - Run. Lenike phones to say Cello are ramping down their magnet.

6⁴⁰ Data taking (MIPROC-16 OFF)

11⁰⁰ VTX ch trip. Run stopped, JDAS is getting ill. JEO and HEM on the job.

11¹⁵ HV turned down while the experts are working. TOF-chs broken, for signal to PKR.

11³⁴ Run started with MP-16 OFF after HEM has rebuilt JDAS. Seems to run without problems.

1240 Riesberg + Mills chasing faulty DL8.

13³⁰ Stopped Nord, switch PIO and system crates and Plessey off/on. Now loading Plessey works, and also data taking with Plessey/~~Moreover, DL8 problem above seems gone~~. ∴ Problem is gone. Nothing understood!

14¹⁵ JEO changed DL8 module; seems to have fixed the problem. J.O.

15¹⁰ PKR calls. A quadrupole is out, will take at least ~~1h~~ ½ hr. Access possible, if desired.

16⁰⁰ S Wagner + Hughes

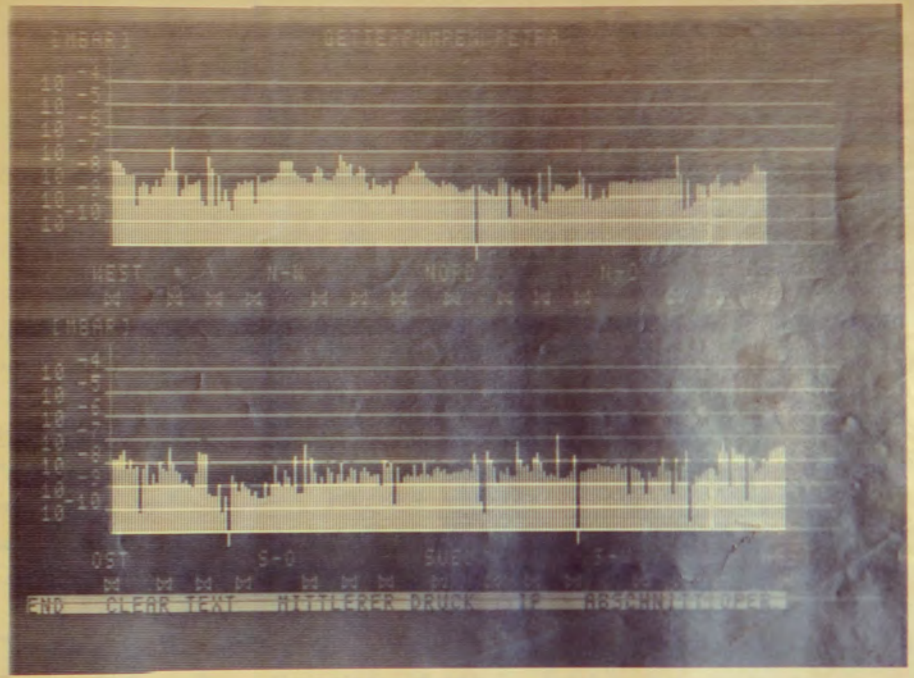
20⁰⁰ Plessey dust filter taken out. Old rule: Dust on electronics does no harm, but blocked filters do. Filters looked rather black. Unknown what the blocking factor was. Plessey is a high-power Schottky device.

16⁵⁰ Beams Ready
Start Run
Problems with HV MFR55 - Switched off Mains a HV on Manually OK
Stop Run
Start Run
Both Runs give YPARA 45: T2 Enable bits Expected 007777 actual 007777
T2 Coincidences Expected 050777 actual 000340

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)	TOF (V)	ONLINE REJ MIPROC T_2 %	NORD 50 T_1 & T_2 %	Σ Bhabha	MH	E_{beam}	Mag. Field	Remarks

25/3/85

Phone Kriehtriel – not hardware! Phone Olsson – Decide to Restart ZDAS, problem (YPARA 45.) goes away.



$I^- = 4.2$ mA 25.3.85
$I^+ = 4.4$ " 10⁵⁰

up.

ck! – DISPLAY BUSY.

RUN | DATE | START | STOP | AT RUN START I+ I− | DEAD TIME (%) | TIME (sec) | RECORDS IN | RECORDS OUT | ALL ×10^6 | TØ REJ ×10^6 | T1 ACC SUM | T2 ACC SUM | T1 Bit 2 E4≥6GeV | T2 BIT 17 2T·E4·≥2TR

Processors ON/OFF N50 MIP TOF FAMP | <L> | Bhabha ∫Ldt | ∫Ldt exp, energy | IBM/Tape OUTPUT | At Run Start ID (μA) TOF (V) | ONLINE REJ T2 % NORD 50 T1 & T2 % | Σ Bhabha | MH | E beam | Mag. Field | Remarks

2720

25/3/85

3^40 Continue datataking without MP-16.

VTXC HV since Run 20038 1450/-1550 V HAG

7^05 Beam loss.

"Kurze Unter…

7^45 Talked to …

He will be i…

We have to r…

8^00 J.A.J. Skard…

8^45 + J. Chrin… Reset magne…

9^00 Gas checked,

10^20 Luminosity –

6^00 Data taking

11^00 VTX ch trip…

11^15 HV turned …

11^34 Run started

12^40 Riesberg & …

13^30 Stopped No… after data …

14^15 JE Oachunge…

15^10 PKR calls.

16^00 S Wagner

16^50 Beams Rea…

Start Run

Problems with HV MFR55 – Switched off Mains a HV on Manually OK

Stop Run

Start Run

Both Runs give YPARA 45: T2 Enable bits Expected 007777 actual 007777

T2 Coincidences Expected 050777 actual 000340

25/3/85

Phone Krehtriel – not hardware! Phone Olsson – Decide to Restart JDAS, problem (YPARA 45.) goes away.

Run 20049 in progress

Within 2 Mins	Error 33	branch 1	crate 1
	53		System watchdog
	33	4	6
	53		Sys watchdog
	33	4	6
	"	"	"
	"	1	1
	"	1	1
	"	4	6
	46	MP 16	out of Seq.
	CAMZR (11-14)	17777 17777	17777 17777
	53	1	1.

Run 20049 stopped. too many JDAS Errors

26.3.85

0^00 Loebinger & Dittrich

0.15 Gas check done

2^10 Message from system console YOPN50 – EXTERNAL STOP AT 100330 ?

3.30 New beams. Try to start new run but cannot because of NORD 50 stop.
Cured by EXIT followed by procedure A3 in JDAS manual.

3.50 Trouble with MFR 55 (TOF) again. Eventually cured via NAR @ TOF

4.25 DL8 - bad connection 1200-1207 (#150). "Fixed" by waggling.

5.30 Cannot display histogs or events on LUN 34 — always "TOO QUICK! – DISPLAY BUSY".

5.40 Beams lost

Run	Date	START	STOP	AT RUN START I^+	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 $E_{L6} > 6$ GeV	T_2 BIT 17 $2T \cdot E_4 \geq 2TR$
20040	25.3.85	10.41	11.00	4.69	4.56			4218	3149						
20041	"	11.34	12:11	3.58	3.77	33.4	1411	5243	3172	367	122	2292	"0"	481	26
20042	"	12.34	12:37	2.84	2.83	16.2	179	682	383	47	7.6	303	"0"	57	3
20043	"	13:33	13:59	1.91	1.95	9.1	1480	3219	1907	385	350	1974	"0"	316	8
20044	"	14:06	14:06	–		–	–	–		–	–	–	–	–	–
20045	"	14:23	14:29	1.63	1.74	10.9	353	714	347	92	10	464	"0"	61	1
20046	"	22:54	23:05	4.27	4.69	31.4	360	1148	856	93	29	815	0	210	2
20047	"	23:05	23:16	4.02	4.54	24.7	601	2208	1510	156	38	117	"0"	327	4
20048	"	23:20	23:20	4.01	4.41	~~26~~									
20049	"	23:22	23:50	3.95	4.34	25.3	1648	6006	4175	428	108	320	"0"	842	29
20050	"	23:51	00.30	3.67	4.04	21.3	2337	8001	5623	608	130	4893	"0"	943	36
20051	26/3/85	00.31	00.53	3.31	3.60	18.3	1270	3913	2585	330	60	2518	"0"	448	30
20053	"	3.41	4.20	4.52	4.25	30.7	2106	8001	5589	548	168	4571	"0"	924	43
20054	"	4.21	5.02	4.01	3.59	20.6	2451	8002	5373	638	131	4829	"0"	978	32
20055	"	5:03	5:40	3.6	3.18	16.9	2212	6364	4002	575	97	4000	"0"	800	27
20056	"	7:08	7:17	4.16	3,96	20,3	480	1478	990	124	25	868	"0"	141	5
20057	"	7:22	8:03	4.00	3.61	16.8	2413	8002	5719	628	106	4544	"0"	821	46
20058	"	8:04	8:24	3.33	3.09	17.8	1069	3554	2972	279	49	2328	0	307	14
20059	"	8:29	8:31	3.30	2.89	13.8	62	160	159	16	2	102	0	18	0
20060	"	8:41	9:08	3.21	2.81	13.6	1568	4760	3301	408	56	2749	0	498	17
20061	"	9:19	10:10	2.94	2.56	12.7	2532	6124	3520	660	84	4107	"0"	681	23
20062	"	11:28	11:31	4.45	4.91	23.3	120	366	413	31	7	219	0	50	0
20063	"	11:34	12:17	4.37	4.83	42.6	2193	8002	4956	571	243	3664	"0"	755	34
20064	"	12:18	13^07	3.79	4.22	34.4	2168	8002	4684	565	194	3822	0	811	20
20065	"	13^08	13^50	3,19	3.66	22,2	2217	8002	4520	577	128	3980	0	765	35
20066	"	13^50	14^02	2.80	3.29	15.7	418	1469	791	109	171	805	"0"	133	4
20067	"	21^14	21^41	4,08	4,52	19,4	643	2277	1506	168	32	1494	0	393	13
20068	"	21^45	21^47	3,50	4,21	20,6	132	496	351	34	7	295	0	50	1
69	"	21^55	22^23	3,41	4,12	15,4	861	2730	1620	224	34	1996	0	291	10
20070	"	22^31	23^06	3,12	3,80	15,3	3285 ~~3661~~	3661	2249*	334	51	2186	0	419	12
20071	"	23^55	00^02	4.31	4.17	26.3	224	832	573	58	15	417	0	94	5
20072	27/3/85	0^39	1^27	3.76	3.37	16.4	1139	3417	2152	296	48	1961	0	419	13
20073	"	6^01	7^02	4.46	4.66	20.5	1199	4068	2760	312	63	2423	0	484	30
20074	"	7^39		4.36	4.88	28.5	211	852	599	54	15	410[illegible]	"0"	101	7

Run	Processors ON/OFF N50	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)	TOF (V)	ONLINE REJ MIRROC T_2 %	NORD 50 T_1 & T_2 %	Σ Bhabha	MH	E_{beam}	Mag. Field −1 × Gauss	Remarks
20040	ON	OFF	ON	OFF		1.15	23.78	IBM	1.2	2.3	0	25			21.802	(6314A) −4072	Run stopped, JDAS trouble. No run summary
20041	ON	OFF	ON	OFF	0.72 ~~0.80~~	1.06 ~~0.18~~	~~24.79~~ 24.84	"	1.0	3.3	0	42	12	0	21.800	−4072	Run stopped (Also DLS problems)
20042	ON	OFF	ON	OFF	0.44	0	24.84	"	0.9	2.3	0	46	0	0	21.800	"	(" " ")
20043	ON	ON	ON	OFF	0.33	0.27	25.11	"	0.5	0.7	0	42	3	1	21,800	−4073	(" " ")
20044	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	Junk
20045	ON	ON	ON	OFF	0.16	0	25.11	IBM	~0.3	~0.5	0	56	0	0	21.800	−4073	Beams dumped
20046	"	"	"	"	1.34	0.48	25.59	IBM	0.55	1.4		31	1	0	21.800	−4069	
20047	"	"	"	"	1.61	0.96	26.55	"	1.0	1.5		34	~~12~~	0	21.800	"	
20048	"	"	"	"	—												Test with T2 Cernc Problem.
20049	"	"	"	"	1.40	2.30	28.85	"	1.0	1.5	20%	32%	26	0	21.800	−4070	Stopped after Multiple JDAS Errs
20050	"	"	"	"	1.43	2.65	31.50	"			18	32	30	0	"	−4068	
20051	"	"	"	"	1.20	1.68	33.18	"	0.8	1.2		36	19	0	"	−4070	Beams dumped
20053	"	"	"	"	1.55	3.45	36,63	"	1.0	2.0		32	39	1	"	−4070	
20054	"	"	"	"	1.36	3.89	40.52	"	0.9	2,6		35	44	0	"	−4070	
20055	"	"	"	"	1.11	3.18	43,70	"	0.8	1.1		39	36	0	"	−4070	Beams lost
20056	"	"	"	"	1.76	0,71	44,41	"	0.8	1.4		35	8	0	"	−4070	
20057	"	"	"	"	1.61	3.87	48.28	"		1.5		30	43	1	"	−4069	
20058	"	"	"	"	1.29	1.38	49.46	"	0.85	1.0		~~[illegible]~~ 29	12	1	"	−4069	VTXC 1475V Datataking hung. Run stopped
20059	"	"	"	"	1.27	0.08	49.54	"	0.8	0.9		~~[illegible]~~ 45	0	0	"	−4069	Datataking hung. Run stopped.
20060	"	–	–	"	1.13	1.77	51.31	"	0.8	0.9		~~45~~ 32	17	2	"	−4070	Stopped to fix DL8 #34
20061	"	"	"	"	0.98	1.50	52.81	"	~~0.8~~	~~0.8~~		45	17	0	"	−4070	Beams Dumped.
20062	"	"	"	"	2.05	0.09	52.90	"	1.3	1.8		36%	1	0	"	−4070	Datataking hung.
20063	"	OFF	"	"	1.57	4.24	57.14	"	1.2	1.8		40%	48	0	"	−4070	
20064	"	OFF	"	"	1.26	2.73	59.87	"	1.2	1.5		44%	32 ~~27~~	2	"	−4070	
20065	"	"	"	"	1.19	2.63	63,50	"	1,0	1,2		46%	34	1	"	−4070	
20066	"	"	"	"	1.14	0.44	63.94	"	0,9	1.0		49%	5	0	"	−4070	Beams dumped
20067	on	on	off	off	0,97	0,97	64,91	"	1,2	1,5		36%	11	0	"	"	many trips, bad fill
20068	"	"	"	"	1,30	0,35	65,26	"	1,0	1,5		31%	4	0	"	"	" "
69	"	"	"	"	0,99	0,62	65,88	"	1,0	1,5		44%	7	0	"	"	" "
20070	"	"	"	"	0,74	0,80	66,68	"	1,0	1,4		41%	9	0	"	"	Beams lost "
20071	ON	ON	ON	OFF	1.14	0,44	67,02	IBM	~~1.2~~	~~1.7~~		35%	5	0	"	−4070	
20072	"	"	"	"	0.67	0.88	67.90	"	1.2	1.7		40%	10	0	"	"	Beams lost
20073	"	"	"	"	1.56	2.30	70.20	"	1.2	1.9		35%	26	3	"	"	Beams lost
20074	"	"	"	"	1.57	0.34	70.54	"	1.4	2.3							Run Stopped Bad Background.

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 $E_{L4} > 6$ GeV	T_2 BIT 17 $2T \cdot E_4 \cdot \geq 2TR$

26/3/85

8^{00} Barlow & Kawagoe on shift

8^{00} Gas checked.

8^{26}. No Triggers. White lamp on. Stop–Start and datataking resumes.
There are many "Bad event structure" messages.

8^{35} HV error – TOF MFR55 Ø ch., HV=3354 kV, should be 2760 kV ⇒ reset by (WAR) ∂TOF.

9^{10}. Missing DL8 problem. Pull out offending module (34) and apply eraser. This kills it completely – call expert.
Then stop and restart run. All well – problem spontaneously cured? – Discovered that when DL8 is cleaned a new run should be started.

Mystery of the Run Summary – Some counts (eg T_2 scalers) are zero or just wrong. Found that one of the scalers gives only zeros – THIS IS DUE TO THE CABLES NO BEING PLUGGED IN! "Krehbiel & Narbuda will provide the missing connections tomorrow (27.3)... J.O."

10^{20} TOF-threshold for soft I.D.-trip readjusted to 3V — S. Bethke (call me in case of problems with soft trips)

Run 20062 hung after a few hundred events – Pause/Continue fails to cure it. Also many "bad event structure" errors.
Stop run and Turn off Myproc (on advice of HHM)

(before starting Run 20062)
I tried to "repair" LG-ADC bad channels (CR3-668 & CR2-667). They are now O.K.
But "New" bad channels appeared!! They are CR2 – 929, 935, 953, 959. I will try to repair them in the next injection time. K.K.

12^{39} Vertex Champer trip.
12^{53} " " again.
13^{04} " " again! too often.
14^{00} Beams dumped. PKR need a short break to fix something – circa 2 hours.

14^{42} The 4 new bad LG-ADC channels were repaired. We have now (only?) 2 bad channels.
K.K.

16^{00} Olsson, Ambrus. Previous shiftcrew left with a TOF HV error on!

19.50 Checked TOF HV, everything looks good, MFR 55 also came on.
If there is trouble please phone me, if before midnight or after 7 am.
B. Naroska

Processors ON/OFF N50	MIP	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 (µA)	TOF (V)	ONLINE REJ SUB MIPROC T_2 %	NORD 50 T_1 & T_2 %	Σ_{Bhabha}	MH	E_{beam}	Mag. Field	Remarks

26/3/85

21^{13} New fill, start R 20067
MFR 61 not on, no Lumi: Set by Hand, OK
YSPY: Trigger 2 output missing 55, 151 No hole in histogram. Stop Run, OK in 20068...
Very bad condition all fill, trips and trips and trips--- MFR 55: 12 only ½ voltage.
20069 MP anal. incompl. JDAS 45:1 Reset ⇒ requires no resetting!
Now MFR 55:12 is only 0.280 kV Tel. Naroska, reset by Prog successful.
after a while Trigger histogram and TOF errors from YSPY. Inspection shows that ½ of MFR 55 is off!
after fiddling with the TOF program it is suddenly set again. continue with 20070
20070: MFR 53: 30, 31 claimed to be at 2.7 kV soll 2.1 Reset by "TOF"
21^{50} Vertex chamber bad trip, Teth. OK --- and again 4 times
23^{05} Beam loss, all chambers trip
Obs! There have been no "bad event structure" in any run for this fill. MP16 was on all the time..... J.O.
23^{50} New fill: Now bad event structure is very frequent, also IBM online Job check 2. Rate is high
all preceded by one MP16 incomplete analysis.

27/3/85
24^{00} Dunerdoth/Skard on shift.
0^{39} Beams now stable enough to start run, but lots of ID and BP-chamber trips....
1^{27} Beams lost; Hard trips on ID, BP-ch., and Z-chambers.
1^{30} "Short break".
4^{30} PKR says "short break" is likely to last for at least another hour. We run the magnet down → 1000A.
5^{00} Injection. Magnet back up to 6300 A.
6^{01} We're running again, but violent "spikes" in TOF rate + anode current keep tripping the detector...
6^{25} JDAS GR 46 – MP-16 out of sequence, YY=1, COW2R (11-14) 177777 ≤ 4 times
TOF Rate has spikes & we get trips of vertex chamber, I.D and Z chamber too (can't find a help file).
7^{00} Beams lost
7^{35} New fill – There are too many spikes (ie bad beam conditions) for us to take data for more than a minute.

08^{00} Hughes.
Many vertex & ID trips –
8^{16} PKR investigating ripple on Quadrupole currents affecting Q values
PKR says (Lünnke): The ripple is on the mini β quads. They had an investigation already yesterday, but they could not find anything. They continue today checking the power supplies. We told them that we cannot run under these conditions. Thus PKR is fully aware of the seriousness of the problem. W. Bartel
Eventually they have to switch off for some time.
8^{16} Phoned Knies Office No Answer. Phoned Knies's home No Answer

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 $E_{LG} \geq 6$ GeV	T_2 BIT 17 $2T \cdot E_4 \cdot \geq 2TR$

 27/3/85

8^{57} Stop running too many trips – unstable beam.
09^{15}. Knies has left home! - - - been seen on his bike on site!

09^{35} Try running up HV on ID & Vertex Ch's TOF is 1.6 volts a more stable.

09^{37} Start Run # 20075.
09^{57} Franke? from F58 phoned to say that there are, and have been over the last days, problems with the IBM link corrupting data. Level of corruption unknown ≲ few % ? Meanwhile we continue to run with IBM link ...... This may be the cause of problems yesterday.

10^{21} Suggest Refil in 10 min Cello OK ✓ Tasso ✓ Mark J ✓ ; Knies arrived – had forgotten –

Runs 200874 78 lost due to IBM trouble (just a few events).

13^{06} Start running with new filling. HOWEVER: ID and Z-Chamber and beam pipe chamber suffer from unstable beams. No reasonable running possible, even though currents are only 3 mA.
PKR says: Filter for power supply of mini β QUADS is down. It cannot be repaired today. Therefore poor running conditions will continue til tomorrow. Several hours for repair work are expected.

13^{20} ~~Printout run 20081 lost (a/~~ · Crate 1 branch 7 giving missing LAMS (ID)
cured – now there is another DL8 missing

Test version of Nord-50 program installed – in event of bank structure error, some printout will (may) appear on the system console. If ~~JDAS~~ is restarted the default version will be loaded.

$14 - 15^{00}$ No reasonable running possible: z-, beam pipe, TOF- and ID chambers keep having troubles every few minutes
15^{01} beams lost TOF-rate threshold 3V → 5V R

16^{00} W. Bartel & S. Yamada on shift
short break
17^{00}
complete Nord hang up, reload Nord
no reaction to any key level 3

Processors ON/OFF N50	MIP	TOF	FAMP	⟨L⟩ 10^{30}	Bhabha $\int Ldt$ nb^{-1}	$\int Ldt$ exp, energy	IBM/Tape OUTPUT	At Run Start ID (μA)	TOF (V)	ONLINE REJ SUB MIPROC T_2 %	NORD 50 T_1 & T_2 %	Σ Bhabha	MH	E_{beam}	Mag. Field	Remarks

27/3/85

Very frequent (~every 20 min) soft VTX-chamber or ID-trip due to beam losses.

18:30 Riesberg exchanging broken DL 8
19:30 New Procedure for HV Trips:

> In production Run (Blue lamp on!) a HV Trip will cause JDAS Error 52. Do the following:
> Wait until Chamber(s) are down (red light on control board). then raise chamber HV by pressing the green buttons on their controls.
> Wait until HV OK again (green steady light)
> press return on console + press green button on trigger box
> ⇒ Run will continue normally
> J. O.

23^{55} Beams lost.

85 MAR 28. Duerdoth . Becker.

~~28/3/85~~ MFR 55. errors – switched to local & "RESTORE" each channel by hand ; back to REMOTE. hope it works
↑ it didn't

01^{00} Gas checked.
01^{30} New fill.
01^{40} Problems with TOF HV 55 /(53) – reset by hand
01^{54} JDAS Err. 33 – missing LAM br. 1 cr. 1, B.p. ch.
02^{39} We are taking data – beam is stable & no I.D. trips
But. 1) MFR 55 problem. YVOLTS says it gives 00 volts . HISTOG of TOF HIT MAP has lost 1/3rd (ie MFR 55) low rate.
↗ see STD HISTS. 20095
2) frequent JDAS READOUT ERR 33. Missing LAM br. 1. cr. 1. Beam-Pipe.
3) " " " 53 system crate watchdog flag PARMS 000424 140204 (oct)
4)

03^{00} dump histograms at last run – when finished the screen still flashes ISPLAY SEARCHING FOR OLD RUN !
03^{17} End of Run. – we stop to attack MFR 55.
03^{30} Exchange of Le Croy power supply MF 55 , Run the "TOF" program → seems to be o.k.
04^{59} New fill & new Run: – TOF HIT MAP looks OK now. ↑ BRAVO!

5^{30} JDAS Errors 33 / 53 very often !

7^{15} JDAS Error 53 together with the printout : Error 37, IOX err. Adr. 71007 level 8
106625
– No triggers , Stop run
7^{25}. PKR phone – dump now & break until about 13^{00} hrs.

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 $2T \cdot E_4 \cdot \geq 2TR$
52															
20075	27/3/85	9 40	10 31	2.91	3.50	18.7	3056	8002	4960	795	149	4861	2412	1055	43
76	"	10 32	10 41	2.60	3.13	21.3	494	1167	731	129	27	707	350	138	12
20079	"	13 00	13 02	3.4	3.0	15	129	374	215	34	5	217	112	38	0
20080	—	—	e m p t y												
20081	"	14 01	14 07	2.83	2.68	11.8	362	794	425	94	11	504	219	87	2
20082	"	14 12	14 27	2.82	2.62	16	653	1443	788	170	26	917	403	~~167~~ 108	7
20083	"	14 33	14 36	2.74	2.52	14	109	393	160	28	4	190	84	37	3
20084	"	14 33	14 51	2.71	2.49	15	670	1455	762	174	26	980	385	164	6
20085	"	no	SUMMARY												
20087	"	17 06	17 32	4.77	4.68	30.8	1383	4684	3183	360	111	2542	'0'	533	18
20088	"	17 35	17 58	4.31	4.34	28.6	1243	4152	2741	323	92	2304	0	515	25
20089	"	18 00	18 22	3.91	4.12	24.0	1075	3510	2310	279	67	2016	0	371	20
20090	"	18 57	19 40	3.40	3.74	20.2	123	474	272	32	6	234	0	45	2
20091	"	19 43	20 46	2.89	3.21	15.8	3437	8002	4606	894	141	5227	0	984	28
20092	"	20 46	21 35	2.50	2.80	17.6	2901	5859	3133	755	133	3958	0	653	17
20093	"	22 42	23 23	4.83	4.78	34.3	2388	8002	5634	621	213	4611	0	960	37
20094	28.3.85	23 23	23 52	4.22	4.23	28.3	1717	5721	3870	447	126	3449	0	773	28
20095	"	1 55	2 36	4.43	5.04	29.8	2260	8001	5412	588	175	5140	0	972	37
20096	"	2 37	3 18	3.86	4.47	27.4	2457	8001	5261	639	175	5267	0	979	33
20097	"	5 00	5 41	4.57	4.77	28.4	2450	8002	5485	637	181	4841	0	893	41
20098	"	5 41	6 27	4.01	4.23	28.7	2736	8001	5411	711	204	4925	0	986	36
20099	"	6 28	7 14	3.50	3.72	18.5	2776	7700	4869	722	133	4944	0	950	35
20100	29/3/85	3 27	4 15	4.02	4.00	14.7	2810	8001	4992	731	108	5394	0	1548	37
20101	"	4 15	5 19	3.50	3.64	12.2	3195	8002	4595	831	102	5783	0	1137	31
20102	"	5 19	6 33	2.26	2.75	9.2	3661	6888	3486	952	88	4828	0	723	23
20103	"	6 56	7 49	3.86	3.80	13.1	3151	8002	4698	801	1072	5163	0	1152	27
20104	"	7 49	8 09	3.45	3.39	11.7	1134	2714	1478	295	34.6	1719	0	304	14
20105	"	8 12	9 15	3.27	3.23	11.9	3757	8001	4091	979	116	4829	0	920	41
20106	"	9 15	10 23	2.78	2.82	11.1	4017	7966	3965	1076	116	5082	0	989	31
20107	"	16 15	16 16	3.25	2.74	9.9		137	80	—	—	—			
20108		NONSENSE		RUN —		IGNORE									
20109	"	16 54	17 05	5.11	5.16	31.3	431	1562	896	112	35	914	0	321	7
20110	"	17 07	17 24	4.78	4.92	54.2	992	1669	1006	245	133	910	0	195	7
20111	"	17 26	18 05	4.50	4.63	24.1	2244	6478	3900	584	141	~~1443~~ 3544	0	833	38

Processors ON/OFF N50	MIP	TOF	FAMP	<L> 10^{30} cm^{-2}sec^{-1} <L>	Bhabha $\int Ldt$ nb^{-1}	$\int Ldt$ exp. energy	IBM/Tape output	At Run Start ID (μA)	At Run Start TOF (V)	Online Rej MIPROC T_2 %	Online Rej NORD SC T_1 & T_2 %	Σ Bhabha	MH	E_{beam}	Mag. Field $\times 10^{-4}$ Gauss	Remarks
53																
ON	ON	ON	OFF	0.66	1.50	72.04	IBM	?	?	~~41%~~	41%	17	1	21.800	-4073	
"	"	"	OFF	0.59	0.27	72.31	"				41%	3	0	"	-4073	Beams dumped
"	"	"	"	0.86	.09	72.40		1.2			47	1	0	"	-4073	Br.
ON	ON	ON	OFF	.65	0.35	72.75	"				50	4	0	"	-4073	
"	"	"	"	.60	.09		"	0.8	1.2		49	1	0	"	"	
"	"	"	"	.64	.27	73.02	"				51	3	0	"	"	
"	"	"	"	.59	.27	73.29	"				50	3	0	"	"	Beams ~~lost~~ dumped by H. Rieseberg when adjusting TOF Hardware
"	"	"	"	1.28	1.33	74.62	"	?	2.5		35	15	1	"	4074	20086 pedestals only VTX 1450V
"	"	"	"	1.22	1.59	76.21	"	1.6	2.0		36	18	2	"	4073	
"	"	"	"	1.33	1.43	77.64	"	1.2	1.5		36	20	0	"		
"	"	"	"	1.55	0	77.64	"	1.1	1.5		0	0	0	"	"	
"	"	"	"	0.85	2.92	80.56	—	~~0.6~~	~~0~~		45	33	4	"	4072	
"	"	"	"	0.71	1.50	82.06	—	0.6	0.8		49	17	0	"	4072	Beams dumped.
"	"	"	"	1.85	3.36	85.42	IBM	1.1	2.0		32	38	2	"	4072	
"	"	"	"	1.85	2.83	88.25	"	0.7	0.9		34	32	3	"	4071	Beams lost
"	"	"	"	1.55	4.86	93.11	"	1.1	1.1		34	55	1	"	4070	
"	"	"	"	1.71	4.68	97.79	"	0.8	0.9		36	53	1	"	4070	Beams dumped.
"	"	"	"	1.89	5.04	102.83	"	1.2	1.8		33	57	1	"	4071	
"	"	"	"	1.63	4.59	107.42	"	1.0	1.5		34	52	1	"	4071	
"	"	"	"	1.46	3.71	111.13	"	0.9	1.2		39	42	2	"	4071	Beams dumped.
"	"	"	"	1.07	3.01	114.14	"	0.8	1.3		49	31	4	"	4072	VTX 1475V
"	"	"	"	0.88	2.82	116.96	"	0.7	1.1		44	33	1	"	4073	vtx-channels off
"	"	"	"	0.63	2.30	119.26	"	0.5	0.6		51	29	1	"	4070	beams dumped.
"	"	"	"	1.19	3.75	123.01	"	0.85	1.3		43	48	1	"	4073	
"	"	"	"	1.35	1.77	124.78	"	0.9	1.0		48	20	0	"	4074	
"	"	"	"	1.05	3.96	128.74	"	0.8	0.85		52	48	0	"	4070	
"	"	"	"	0.87	3.00	131.74	"	"	"		53	34	0	"	4070	Beams lost
												2	0	"	4070	BEAMS LOST
"	"	"	off	—	—	—		1.3	2.1		—	—	—	"	4070	PROGRAMME PROBLEMS!
"	"	"	OFF	~~1.03~~ 0.84	0.44	132.18	"	1.3	2.1		46	5	0	"	4070	RUN STOPPED BY EXPERTS!!
"	"	"	off	1.38	1.41	133.59	"	1.2	1.8		46	16	0	"	4070	" " " " .
"	"	"	"	1.92	4.15	137.74	"	1.1	1.55		45	47	3	"	4070	

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 $E_{LG} \geq 6$ GeV	T_2 BIT 17 2T· $E_4 \cdot \geq 2$TR
54	28/3/85														
	8:00	Ramcke + Hellenbrand on shift													
		magnet to 500 amps													
		DL 101 (Wires 808-815) : Timing bit 64 was missing since beginning of period (Runs 20000-20099) Rig now it is corrected													
	9:30 – 10:~~15~~	cosmics test runs with magnet + HV on													
	10:45	magnet to 500 Amps													
	13:25	magnet sleepwalked to ~~1~~280 amps, set to 500 amps again													
	16.00	Dietrich & Loebinger on shift.													
	16.15	Gas check done.													
	18⁰⁰	~~Hoch was at 50 Hertz, since yesterday arcing~~													
	21.45	Petra still down, Restart 0⁰⁰													
		Run magnet ~~to~~ 500A													
	29/3/85														
	0⁰⁰	Cartwright & Kawagoe on shift													
	0⁰⁰	PETRA says INJECTION. Magnet → 6300A													
	0.25	Gas check done.													
	2⁰⁰	After time losing the beams at 18-19 GeV, PETRA declares SHORT BREAK. Magnet → 500A.													
	2.55	PETRA – INJECTION Magnet → 6300A													
	4.20	Vertexchamber trip, followed by ID soft trip. PETRA energy → 21.830; SHORT BREAK. Transmitter failure?													
		Run paused													
	4.15	Z-chamber trip													
	4.48	Z-chamber trip													
	6.13	JADE error 53 – system crate watchdog flag PARMS = 002024 140204													
	9⁰⁰	Hagemann and Warming on shift													

Processors ON/OFF N50	MIP	TOF	FAMP	<L>	Bhabha ∫Ldt	∫Ldt exp. energy	IBM Tape OUTPUT	At Run Start ID (μA)	TOF (V)	ONLINE REJ MIPROC T_2 %	NORD 50 T_1 & T_2 %	Σ_{Bhabha}	MH	E_{beam}	Mag. Field	Remarks

55

8.00 Something strange happened to the VtxC HV-System this night. All HV settings are reset to some historical (hardware build in) values. The only way this could happen is a power fail or someone has switched the HV-NIM crate off and on. From the histograms (did anyone look at them?) this could be traced to run 20101 (4 IS ?)
So: no usefull vertexchamber-information for run 20101, 20102, 20103, 20104
We did look at HISTOGRAMS. TO A NON-EXPERT THERE IS NOTHING OBVIOUSLY WRONG WITH THEM.
(HK) ← The wireside map has by a factor 0.3 ... 0.5 less entries than normal.

Note to J.O. :
with the low HV settings this night, the μP's has to do more or less nothing.
→ No missing LAM's all the night! When I reset the HV (increasing calculation time for the μP's) we get again a lot of missing LAM's from the VtxC-System.

9.30 Gas system OK.
9.43 N50 reloaded by HEM with new test pgm.
frequently missing lam branch 1 crate 1 (Vtx ch.)
about twice/hour : missing muon crate 8 reset OK.
10.22 mayor CAMAC / DMA error – IOX errors on system console. Testruns still work.
10.23 beams lost
15.00 fan of wirach (link computer for graphics → IBM) being replaced by Mr. Bogaram, was silent.
Found 2 interchanged cables at TOF-TDC : corrected from run 20108 onwards
(Counter 2 was affected.) 67 properly connected 20112 "
2 LG (end cap) always on. channel ∅ & 6
16⁰⁰ Hedgecock + Nomaniya on shift
Gas check done
16.15 Beams lost → ID tripped. And VXC.
~~18⁰⁰~~ Missing LAM Br=1 Cr=1 B.P. chamber occurs often as usual
Error 53 System crate watchdog flag PARMS 002424 140204 occurs frequently. } ⊛
18.15 Error 45 MP-16 analysis incomplete 00000 140204
CONZR (11-14) 17777 -"- -"- -"- 00002 140204
18.19 ⊛
18.25 Error 44 DMA Timeout Br=3 Cr=6 B.P. chamber
Trigger hung up: reset, stop run start new run
18.37 Z-chamber tripped ^ pause / continue
18.45 "

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. $E_4 \cdot \geq 2TR$
20112	29.3.85	1805	1826	4.03	4.11	17.9	1216	3311	1936	316	56	1834	0	412	17
20113	"	1829	1929	3.79	3.87	14.9	3221	8002	4381	839	125	4693	0	1005	40
20114	"	19[58]	2000	3.27	3.33	12.7	1826	4222	2236	475	60.5	2628	0	573	15
20115	"	21[19]	2205	5.23	5.36	31.4	2691	8002	5027	700	219	4130	0	1103	42
20116	"	22[06]	2300	4.59	4.69	25.1	2775	8002	4868	722	181	4299	0	1184	60
20117	"	2300	2333	3.84	4.01	17.7	1956	5501	3168	509	90	3138	-	752	19
20118	30.3.85	0:20	1:15	4.99	5.31	31.7	2631	8002	5120	685	217	4008	0	1080	51
20119	"	1[15]	2[08]	4.18	4.53	25.1	2787	8001	4835	724	181	4341	-	1096	37
20120	"	2[08]	2[29]	3.42	3.93	52 IBM	1232	1880	1120	320	167	1007	-	236	7
20121	"	2 45	3[23]	3.10	3.58	18.6	2202	4761	2524	573	106	2903	0	612	20
20122	"	3 59	4 13	4.65	5.32	27.2	771	2330	1413	201	55	1182	0	318	14
20125	"	4 28	5 2-	4.17	4.90	46.0	2985	8002	3960	776	358	3246	0	796	29
20126	"	5 24	618	3.08	4.21	16.4	3079	8002	4521	801	131	4577	0	1002	35
20127	"	618	623	2.68	3.71	12.7	228	547	311	59	7	331	0	93	2
20128	"	7[02]	7[53]	5.02	5.17	28.2	2726	8002	4862	709	206	4179	-	1129	41
20129	"	7[54]	8[44]	4.18	4.43	24.1	2960	8002	4718	770	185	4457	0	1115	57
20130	"	856	954	3.27	3.75	14.5	3436	8002	4320	894	130	4809	0	1112	41
20131	"	954	1018	2.74	3.28	11.3	1234	2708	1404	321	36	1677	0	341	11
20132	"	1115	1205	4.53	5.05	23.9	2745	8002	4808	714	171	4218	0	1083	29
20133	"	1206	1253	3.86	4.40	19.7	2813	8002	4732	732	144	4443	0	1163	49
20134	"	1253	1258	3.25	3.89	16.1	292	855	479	76	12	491	0	105	3
20135	"	14[11]	15[01]	4.83	4.12	22.9	2778	8002	4804	723	166	4247	0	1146	45
20136	"	15[01]	15[56]	4.38	3.51	20.0	2876	8001	4676	758	149	4534	0	1123	38
20137	"	1556	1722	3.79	2.57	12.7	3315	8001	4202	862	109	4812	0	1088	27
20138	"	1723	1753	3.01	2.53	11.7	1161	2548	1294	302	35	1673		329	9
20139	"	18:19	19:23	5.23	5.12	25.6	1745	5362	3507	454	116	2787	0	699	31
20140	"	19:35	20:20	4.03	4.10	17.7	2416	6623	3662	626	111	3548	0	845	~~250~~ 33
20141	31/3/85	02[21]	02[32]	4.36	4.31	17.7	603	1730	1082	157	28	1067	0	180	5
20142	"	02[33]	03[27]	4.26	4.21	16.9	3067	8002	4729	798	135	4826	0	998	45
20143	"	03[29]	04[21]	3.78	3.74	14.4	3345	8001	4349	870	125	4748	-	1064	45
20144	"	04[21]	0519	3.33	3.31	13.4	3479	8001	4208	905	122	4956	-	1076	36
20145	"	519	0626	2.91	2.92	11.3	3967	8002	3913	1083	117	5188	-	1089	36
20146	"	0626	0655	2.56	2.56	10.2	-	3032	1460	-	-	-	-	-	
20147	"	0703		1.65	1.52										

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. $E_4 \cdot \geq 2TR$
20112	29.3.85	1805	1826	4.03	4.11	17.9	1216	3311	1936	316	56	1834	0	412	17
20113	"	1829	1929	3.79	3.87	14.9	3221	8002	4381	839	125	4693	0	1005	40
20114	"	19[58]	2000	3.27	3.33	12.7	1826	4222	2236	475	60.5	2628	0	573	15
20115	"	21[19]	2205	5.23	5.36	31.4	2691	8002	5027	700	219	4130	0	1103	42
20116	"	22[06]	2300	4.59	4.69	25.1	2775	8002	4868	722	181	4299	0	1184	60
20117	"	2300	2333	3.84	4.01	17.7	1956	5501	3168	509	90	3138	-	752	19
20118	30.3.85	0:20	1:15	4.99	5.31	31.7	2631	8002	5120	685	217	4008	0	1080	51
20119	"	1[15]	2[08]	4.18	4.53	25.1	2787	8001	4835	724	181	4341	-	1096	37
20120	"	2[08]	2[29]	3.42	3.93	52 IBM	1232	1880	1120	320	167	1007	-	236	7
20121	"	2 45	3[23]	3.10	3.58	18.6	2202	4761	2524	573	106	2903	0	612	20
20122	"	3 59	4 13	4.65	5.32	27.2	771	2330	1413	201	55	1182	0	318	14
20125	"	4 28	5 2-	4.17	4.90	46.0	2985	8002	3960	776	358	3246	0	796	29
20126	"	5 24	618	3.08	4.21	16.4	3079	8002	4521	801	131	4577	0	1002	35
20127	"	618	623	2.68	3.71	12.7	228	547	311	59	7	331	0	93	2
20128	"	7[02]	7[53]	5.02	5.17	28.2	2726	8002	4862	709	206	4179	-	1129	41
20129	"	7[54]	8[44]	4.18	4.43	24.1	2960	8002	4718	770	185	4457	0	1115	57
20130	"	856	954	3.27	3.75	14.5	3436	8002	4320	894	130	4809	0	1112	41
20131	"	954	1018	2.74	3.28	11.3	1234	2708	1404	321	36	1677	0	341	11
20132	"	1115	1205	4.53	5.05	23.9	2745	8002	4808	714	171	4218	0	1083	29
20133	"	1206	1253	3.86	4.40	19.7	2813	8002	4732	732	144	4443	0	1163	49
20134	"	1253	1258	3.25	3.89	16.1	292	855	479	76	12	491	0	105	3
20135	"	14[11]	15[01]	4.83	4.12	22.9	2778	8002	4804	723	166	4247	0	1146	45
20136	"	15[01]	15[56]	4.38	3.51	20.0	2876	8001	4676	758	149	4534	0	1123	38
20137	"	1556	1722	3.79	2.57	12.7	3315	8001	4202	862	109	4812	0	1088	27
20138	"	1723	1753	3.01	2.53	11.7	1161	2548	1294	302	35	1673		329	9
20139	"	18:19	19:23	5.23	5.12	25.6	1745	5362	3507	454	116	2787	0	699	31
20140	"	19:35	20:20	4.03	4.10	17.7	2416	6623	3662	626	111	3548	0	845	~~250~~ 33
20141	31/3/85	02[21]	02[32]	4.36	4.31	17.7	603	1730	1082	157	28	1067	0	180	5
20142	"	02[33]	03[27]	4.26	4.21	16.9	3067	8002	4729	798	135	4826	0	998	45
20143	"	03[29]	04[21]	3.78	3.74	14.4	3345	8001	4349	870	125	4748	-	1064	45
20144	"	04[21]	0519	3.33	3.31	13.4	3479	8001	4208	905	122	4956	-	1076	36
20145	"	519	0626	2.91	2.92	11.3	3967	8002	3913	1083	117	5188	-	1089	36
20146	"	0626	0655	2.56	2.56	10.2	-	3032	1460	-	-	-	-	-	
20147	"	0703		1.65	1.52										

N50	MIP	TOF	FAMP	<L> 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 MIPROC T_2 %	ONLINE REJ NORD-50 T_1 & T_2 %	Σ_{Bhabha}	MH	E_{beam}	MAG. FIELD -1 x GAUSS	REMARKS
ON	ON	ON	OFF	1.95	2.21	139.95	IBM	1.0	1.3		46	25	0	21.800	4070	
"	"	"	"	1.67	4.24	144.19	"	0.9	1.2		46	48	1	"	4072	
"	"	"	"	1.39	3.71	147.90	"	0.8	1.0		50	42	1	"	4073	BEAMS LOST.
"	"	"	"	2.18	5.74	153.64	"	1.5	2.1		44	65	1	"	4072	
"	"	"	"	2.13	5.83	159.47	"	1.2			44	66	1	"	4011	
"	"	"	"	1.85	2.92	162.39	"	0.9	1.2		45	33	1	"	4070	BEAMS LOST
ON	ON	ON	OFF	2.20	5.21	167.60	IBM	1.4	2.0		44	59	3	21800	4073	
"	"	"	"	1.66	4.33	171.93	"	1.2	1.6		43	49	2	"	"	
"	"	"	"	1.00	1.77	173.70	"	0.9	1.3		44	20	0	"	"	
"	"	"	"	1.06	1.86	175.56	"	0.8	1.2		46	21	0	"	"	without Z-chamber
"	"	"	"	2.12	2.12	177.68	"	1.3	1.9		45	24	1	"	4072	" "
"	off	off	off	1.34	3.89	181.57	"	1.3	1.8		62	44	1	"	4073	" "
ON	ON	ON	OFF	1.67	3.53	185.10	"	0.9	1.4		48	40	0	"	"	" "
"	"	"	"	1.24	0.27	185.37	"	0.8	1.3		47	3	0	"	"	" "
"	"	"	"	2.20	4.85	190.32	"	1.4	2.1		45	56	5	"	"	" "
"	"	"	"	1.82	4.68	195.00	"	1.1	1.6		44	53	2	"	4072	" "
ON	ON	ON	OFF	1.37	6.10	201.10	"	0.8	1.2		49	69	3	"	4072	Z chamber ON again.
"	"	"	"	1.18	0.80	201.90	"	0.7	1.0		51	9	0	"	4071	beam dumped
"	"	"	"	2.07	5.83	207.73	"	1.2	1.9		43	66	2	"	4072	
"	"	"	"	1.63	4.86	212.59	"	1.2	1.6		44	55	1	"	4070	
"	"	"	"	1.43	0.27	212.86	"	-	-		47	3	1	"	4070	Beam Lost.
"	"	"	"	1.47	3.89	216.75	"	1.2	1.9		42	44	0	"	4070	
"	"	"	"	1.21	2.30	219.05	"	1.1	1.7		45	26	1	"	4070	
"	"	"	"	1.16	3.09	222.14	"	1.0	1.2		50	35	1	"	4070	
"	"	"	"	1.01	0.88	223.02	"	~~.75~~	~~1.00~~		52	10	0	"	4070	beam dumped
"	"	"	"	2.20	3.27	226.29	"	1.9	2.3		38	37	1	"	4071	
"	"	"	"	0.86	2.12	228.41	"	1.3	1.4		48	24	1	"	4070	beams lost
"	"	"	"	2.01	0.88 1.21	229.29	"	1.0	1.4		40	10	0	"	4060	
"	"	"	"	1.76	4.42	233.71	"	1.0	1.3		49	50	3	"	4062	
"	"	"	"	1.36	4.15	237.86	"	0.9	1.2		48	47	0	"	4061	
"	"	"	"	1.21	3.62	241.48	"	0.8	1.0		50	41	2	"	4060	
"	"	"	"	0.89	2.83	244.31	"	0.8	0.7		53	32	0	"	4062	
"	"	"	"	0.79	1.24	255.55	"	0.7	0.7		-	-	-	"	4064	NORD HANGS.
"	"	"	"				"	0.3	0.4					21800	4065	

RUN	DATE	START	STOP	AT RUN START I^+	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 $E_{LG} > 6$ GeV	T_2 BIT 17 2T· E_4 · ≥2TR

29/3/85
16^{57}. Z-chamber tripped
21^{30} Endcap (LG) (−z side) has two spinning blocks (Corresponding energy looks high)
Missing LAM Br=1, Cr=1 occured several times. — MORE PERSISTENT NOW
21^{57} Error 54 System crate watching flag PARM = 000000 140204
22^{02} Error ~~54~~ 33 Missing LAM Br= 2 Cr = 4,
Error 53 System crate . . . PARM = 000424 140204
22^{07} "
22^{45} ID. VTX soft trip
22^{46} Z-chamber tripped
23^{33} BEAMS LOST — ALL HELL BROKE LOSE?

> this is known, there are 2 ADC channels dead → always overflow
> but: PM's are OK
> → therefore linear energy sums are OK
> → therefore no problem with energy triggers
> (only obstacle: the online-rejection does not know about these 2 spinning blocks)

30.3.85 00^{01} Matsumura, Fest on shift
00^{20} new fill ready
00^{30} gas check done
02^{15} why is T_2 acc SUM = 0 ? since run 20087 (see p.48)
02^{20} frequent IBM busy
02^{30} z-chamber trip, ~~can't~~ after reset alarm shows up again, take z-chamber out of Kreuzbeh HV-control etc. box, run without z-chamber delay expert call to a more decent time
[EXPERT WAS NEVER CALLED AND SHIFT CREW NEVER TRIED TO RESTART Z-CHAMBER. DAY SHIFT HAVE HAD NO PROBLEMS. SLC]
4^{00} new filling ready
4^{15} no triggers - hang up - JDAS reloaded
4^{30} several no triggers - cured by pause - continue
5^{20} noticed that MP-10 and TOF where off after JDAS reload

> That's not true we followed exactly the instructions

8^{00} Becker, Duerdoth

PETRA INJECTION ENABLE

8^{30} JDAS error 33 (53) continuously !
8^{40} Gas check done
8^{45} End of run :- Restore interlock for Z chamber & try to turn it on. Downstairs in Rucksack PIE is on z contrast ir. But we power up (from upstairs) in normal sequence and its OK. RESET INSTRUCTIONS NEEDED.

> what is PIE? (Apple?)

8^{55} New Run 20130 — with Z chamber. — Z chamber hits look OK {?? but for 20125 with Z chamber off; half the channels have a few hits ??}.
10^{08} VTX chamber alarm - reset alarm 1
11^{15} New filling.
11^{30} VTX ch. trip
12^{58} Beams lost.

Processors ON/OFF N50	MIP	TOF	FAMP	⟨L⟩	Bhabha ∫Ldt	∫Ldt exp. energy	IBM/Tape OUTPUT	At Run Start ID (μA)	TOF (V)	ONLINE REJ SUB MIPROC T_2 %	NORD 50 T_1 & T_2 %	Σ Bhabha	MH	E_{beam}	Mag. Field	Remarks

30.3.85
14^{12} VTX chamber trip
15^{13} " " "
15^{30} " " " + soft I.D. trip

Submit REFORM Jobs ! (to save (high priority) computer time for monday) L.B.

16.00 Spitzer / Kuhlen on shift
16.48 vertex-chamber, z-chamber and inner detector hard trip
18.40 At beginning of fill lots of Vertex ch. alarms due to high TOF rate. (The contact level is 2V)
20.23 beams lost; short break, Mark J wants access
23.15 CAMAC and NORD clocks moved forwards by one hour (H.E.M)

31.3. 00^{01} SCHNEEKLOTH + HEDGECOCK.
00^{25} GAS CHECK DONE.
daylight saving time
2^{22} beams ready, started RUN 20141
JDAS READOUT ERROR 33 - Missing LAM br. 1 cr. 1 : bp chamber
DURING RUN 20145 JDAS ERROR 33 MISSING LAM BR 4 CR 6 ID RING 2 (TWICE)
06^{55} SILENCE REIGNS — NORD HANGS — RESTART USING MANUAL. HOPEFULLY ALL IS WELL!!

8^{00} Diekmann & Kawagoe on shift
8^{30} Gas checked.
9^{08} V. Chamber soft trip
10^{00} Magnet Trip

> A "drossel" at DESY is broken. No Refill possible very low Luminosity. They're ~~pushing~~ squeezing this run to the very end.

13^{14} The other Experiments agree to dump the beam as the lumi is so low.
16^{00} hrs Duerdoth & Laumikainen on shift.
DESY DEFEKT RESTART TIME ??? Magnet at 500 A. 17^{00} Gas check done
17^{05}. PKR say no electrons — but we can have positrons. MARK J want a run with just positrons to evaluate background; as this will not hinder repair or tests of DESY, this will be done. PKR indicate that Monday day will be for repairs to DESY. There is a possibility of low luminosity before the 'damping coil'? is repaired.
19^{20}. PKR. say they can't provide single beam. No beam expected till Mon April 17^00 hrs. Magnet switch off (ie isolator OFF).

RUN | DATE | START | STOP | AT RUN START I+ I− | DEAD TIME (%) | TIME (sec) | RECORDS IN | RECORDS OUT | ALL *10^6 | Tφ REJ *10^6 | T1 ACC SUM | T2 ACC SUM | T1 Bit 2 E_{LG}≥6GeV | T2 BIT 17 2T·E4·≥2TR | Processors ON/OFF N50 MIP TOF FAMP | <L> | Bhabha ∫Ldt | ∫Ldt EXP, energy | IBM/Tape OUTPUT | At Run Start ID (μA) TOF (V) | ONLINE REJ SUM MIPROC T2 % NORD 50 T1 & T2 % | Σ Bhabha | MH | E beam | Mag. Field | Remarks

RUN	DATE	START	STOP	AT RUN START I^+	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 $E_{LG}>6$ GeV	T_2 Bit 17 2T. E4. ≥2TR
20147	31.3.85	7:04	8:30	1.65	1.19	7.7	5153	8002	3507	1341	103	5675	0	945	20
20148	″	8:30	10:43	1.33	1.28	8.1	5377	8002	2903	1399	113	5860	0	1000	16
20149	″	10 43	11 23	1.10	0.99	6.9	2303	3430	1223	599	41	2529	0	403	7
20150	″	12 13	13 12	0.98	0.88	7.0	3477	5123	1923	904	63	3706	0	552	11
20151	2.4.85	4:21	4:40	4.63	4.62	34.4		4413	2634						
20152	″	5:17	5:37	3.77	3.77	33.4	4632	4069	2610	299	100	2727	1830	916	18
20153	″	5:39	6:05	3.45	3.47	29.4		3950	2476	367	152	2658	1879		
20154	″	6.52	7.31	4.62	4.70	37.0	2292	8002	5667	569	220	4892	3991	1166	44
20155	″	7.31	8″	3.90	4.06	31.7	2027	6470	4379	527	167	3914	3478	1169	40
20158	″	8 23	8 38	3.25	3.38	22.7	~~2653~~ 744	2197	1403	193	44	~~2197~~ 1353	~~1403~~ 1202	401	8
20159	″	8 41	9 31	3.06	3.18	19.7	2657	7056	4210	691	136	4513	3892	1223	41
20160	3/4	11 40	11 53	5.01	5.32	40.6	7470	2760	1520	194	79	1929	1082	820	11
20161	″	12 07	12 10	4.62	5.02	52.4	1318	450	311	34	18	244	201	73	1
20162	″	12 10	12 18	4.58	4.89	32.7	2640	1127	714	69	22	696	408	196	3
20163	3/4/85	16 08	16 09		J	U	N	K							
20164	″	16 50	17 26	3.33	4.53	17.2	scrambled	8001	1632	320	55	1932	1633	435	99
20165	″	17 28	17 28		JUNK										
20166	″	17 40	~1800	3.01	4.10	19.7	dodo at 10Hz!	[illegible]		286	58		No	RUN	SUMMARY
20167	″	18 05	18 35	2.86	3.96	14.5	Still scrambled	3903	3668	434	63	2650	2048	538	23
20168	″	18 35	18 58	2.70	3.77	15.8	″	2755	1479	348	55	1853	1500	371	10
20169	″	19 05	19 42	2.55	3.58	14.0	″	4583	2351	572	80	3131	2400	681	14
20170	4.4.85	0.22	0:37	4.90	5.02	19.8	848	2508	1782	220	44	1239 ~~2448~~	1335	298	6
20171	″	0:39	1:31	4.71	4.86	17.5	5052	8001	4522	794	138	4718	4823	1300	46
20172	″	1:32	2:26	4.19	4.32	16.8	3246	8001	4438	844	142	4765	4914	1292	43
20173	″	2:26	3:25	3.72	3.57	14.1	3459	8001	4481	899	127	4932	4789	1294	49
20174	″	3:25	4:33	3.31	3.41	12.4	3737	8002	3964	972	120	5084	4647	1286	25
20175	″	4:34	4:58	2.92	3.00	11.8	1385	2814	1318	360	42	1881	1570	467	7
20176	″	11:07	12:34	4.85	5.13	19.9	2980	8002	4694	776	154	4443	4773	1122	27
20177	″	12:34	13:23	3.71 ~~3.78~~	4.23	16.2	2715	6610	3527	707	115	3914	3979	990	32
20178	″	13:29	13:30	3.26	3.76		~10		25						
20179	4.4.85	18 26	18 29	4.48	4.80	18.7	188	385	464	49	9	593	301	49	0
20183	10/4/85	JUNK	(ONLY 8 RECORDS)												
20184	″	″	(JDAS PROBLEMS)												

RUN	Processors on/off N50	M/P	TOF	FAMP	<L> $10^{30}cm^{-2}s^{-1}$	Bhabha ∫Ldt nb^{-1}	∫Ldt EXP. ENERGY	IBM/TAPE OUTPUT	At Run Start ID (μA)	TOF (V)	ONLINE REJ SUM M/PROC T_2 %	NORD 50 T_1 & T_2 %	Σ BHABHA	M.H.	E BEAM	MAG FIELD −1 * OHMS	REMARKS
20147	ON	ON	ON	OFF	0.23	1.19	256.74	IBM	0.2	0.3		58	12	0	21.800	4063	
20148	″	″	″	″	0.14	0.78	257.52	″	0.2	0.3		66	11	0	″	4064	
20149	″	″	″	″	0.09	0.22	257.74	″	0.18	0.25		66	3	0	″	4066	IBM down.
20150	″	″	″	″	0.1	0.34	258.08	″	0.15	0.121		64	4	0	″	4070	Beam dumped ⊗
20151	″	″	″	OFF	1.37	1.68	259.76	″	~~1.12~~	0.38		40			″	4070	Nord crash
20152	″	″	″	″	0.96	1.41	261.17	″	~~1.~~11	0.37	[illegible]	38	16	0	″	4070	
20153	″	″	″	″	0.80	1.59	262.76	″	~~1~~0.9	0.36					″	4074	Nord crash, beams dumped
20154	″	″	″	″	1.26	2.65	265.41	″	1.3	0.54		32	30	1	″	4076	
20155	″	″	″	″	1.08	1.94	267.35	″	1.1	0.44		47	22	2	″	4076	
20158	″	″	″	″	0.89	0.35	267.70	″	0.8	1.6		50	4	1	″	4077	
20159	″	″	″	″	0.79	2.30	270.00	″	0.8	1.3		49	26	0	″	4076	beams dumped
20160	″	″	″	″	0.12	1.50	271.50	″	1.4	1.7		46	17	1	″	4070	
20161	″	″	″	″	0.16	0	271.50	″	1.3	1.7		48	0	0		4073	Without vertex-chamber
20162	″	″	″	″	0.14	0.18	271.68	″	1.3	1.7		45	2	1		4070	Beam loss
20163														only CA Ped.			Missing LAMs in JC
20164	″	″	″	″	0.12	0.62	272.30	″	1.0	1.5		48	7	Ø	21.800	4075	vTAC 145V Ended by N50 hangup
20165									0.68	1.2							Bad event structure
20166					0.10	1.15	273.45	″	0.8	1.2					21.800	4074	Computer collapsed.
20167	ON	ON	ON	off	0.09	1.59	275.04	″	0.7	1.1	?	48	18	1	″	4074	Stopped to adjust BPCL voltage, VTAC 145V
20168	″	″	″	″	0.08	1.24	276.28	″	0.8	0.7		49	14	0	″	4073	Stopped for Jan to look at bad events
20169	″	″	″	″	0.07	1.59	277.87	″	0.7	0.6		51	18	0	″	4073	Ended by N50 hangup
20170	″	″	″	″	1.64	1.39	279.26	″	1.1	1.25	23	32	15	1	″	4074	Stopped by DLS Problems
20171	″	″	″	″	1.60	1.87	284.13	″			47	48	47	0	″	4073	
20172	″	″	″	″	1.18	3.82	287.95	″	1.0	1.4	49	49	~~49~~ 50	0	″	4074	
20173	″	″	″	″	0.91	3.14	301.09	″	1.0	1.0	49	47	42	2	″	4075	
20174	″	″	″	″	0.80	2.97	304.06	″	0.8	0.9	49	54	16	1	″	4076	
20175	″	″	″	″	0.58	0.80	312.06	″	″	-	51	56	8	0	″	4073	Beam dumped
20176	″	″	″	″	1.00	2.65	314.71	″	1.4	1.5	44	46	30	0	″	4073	
20177	″	″	″	″	0.74	2.00	316.71		1.1	1.2	47	51	21	2	21.800	4073	
20178						0	316.71						0	0	″	4073	
20179	″	″	″	″	1.50	0.28	316.99	″	1.2	1.25	~~47~~ 51	49	1	0	21800	4066	

* data taken 1.4.85 see p. 193 this book

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 $E_{LA} > 6$ GeV	T_2 BIT 17 2T · $E_A \cdot \geq 2$TR

1/4/85 00.00 A-Finch on shift.
With the assistance of Launikainen I did the Gas Check. However I did not understand the instruction in 86, last paragraph, so left it alone ↱ I did it!

3.47 H. Wado on shift

7.35 I will leave now.

8:00 Matsumara + Heinzelmann
8:30 Gas check done

Its a good thing that I did not waste any time preparing a "happening" for April-1st - nobody here! Hm

Note to Jan Olsson
Hi Jan!
I managed it to exchange the NP's and A2CC's between crate 1 and 7 without any pin damage. In a test run with 20 000 Trigger at 10 and 50 Hz the watchdog raised his flag two times with PARM=0, 140204

↑ Who is "I" ⇐ the man on shift!

15.30 The two horizontal collimators ± 7.5 m are on either side of the I.P.-point are in principle now movable again. The can be moved from the far side of the experiment with a driver box, which at present is in Mr. Burkhardt's office. If we want to move the collimators we have to call him at 3897. He will then come down and explain us the system.
W. Bartel

16.00 Dwerdath + Hagemann
16.25 Gas check done
22.44 Run magnet up

2/4/85
0:00 Warming + Hellenbrand on shift
water leak at PETRA, repair ≈ 1 hour
magnet to 500 Amps
injection again
3:10 again short break, 1 cavity control malfunctioning, repair ≈ ½ hour
4:20 fill ready, run 20151 started
frequently watchdog flag message P= 000424 140204
error 37 10K adr = 11151 Level 8
background quite high

Processors ON/OFF N50	MIP	TOF	FAMP	<L> 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 MIPROC T_2 %	ONLINE REJ NORD SQ T_1 & T_2 %	Σ_{Bhabha}	MH	E_{beam}	Mag. Field	Remarks

2/4/85
1:30 Readout error 70: data bus not unique branch 1 crate 1, BP-ch. at same time 10K error adr 71102 level 8
4:40 long series of all sorts of readout errors (Missing Data branch 2 or 3, br 3 or 4, br 2 or 4, ...)
NORD hang-up level 14
can't get it working again, "STOP - Masterclear - Load" does not get it starting, it always ends with "STOP"-light on, we phone Howard for advice, he let us try a few things,
finally successful sequence was: STOP - STOP DISK - N10/N50 POWER OFF - N10/N50 POWER on - STOP - MASTERCLEAR - LOAD - DISK ON - start RT 2DAS ...
5:32 continuous row of missing LAM br 1 cr 1 — every trigger ended in missing LAM
PAUSE - CONTINUE cured this
5:48 new on this shift: error 74: wrong LAM br 1 cr 1
5:50 Vtx chamber Trip
5:59 readout error 45: MP-16 analysis incomplete YY=1, COUNTER (11-14) = 177777 177777 177777 ...
6:05 Nord hang up: level 4 restart successful this time
6:08 beams dumped

8.00 Yamada and Schneekloth
8.12 no trigger, stopped RUN, started RUN 20156, ID tripped
8.14 data taking but colour television dead, terminal gives no response, restart NORD
8.23 started RUN 20158
error messages JDAS READOUT ERROR 53: Syst. crate watchdog PARM= 001024 140204
appearing frequently: " " " Missing LAM br 1, cr. 1, bp chamber
" " " " " cr. 3, "

9.30 beams dumped
11.30 Rebuild system. Cosmic running is now OK. Magnet lowered to 500A

16.00 Bethke and Magnussen
21.38 Vakuum-chamber is DESY defective. Restart not before 3:00
tried to inform S. Wagner (nightshift), but cannot reach him. Finch does not exist on the list of JADE-members. OK, so both have to come at midnight...

3.4.85
00.00 (Non-existent) Finch on shift
Still no start before 03-00
00 35 Gas check completed O.K. P.B. P22 fluctuating a lot - is this bad?

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 $2T \cdot E_4 \cdot \geq 2TR$

~~4/3/4~~

3/4/85 02^{18} PETRA injecting Magnet → 6300A

8^{00} Becker, Krehbiel

8^{20} Magnet → 1500
11^{30} " → 6300
11^{50} Beampipe chamb. HV fail
12^{15} " " " — beam lost
12^{30} MARK J want to leave the rest fill in for tests (for short time)
12^{40} PKR: Vakuum Leck im Synchrotron
16^{00} Cartwright/Olsson

16^{05} Run 20163 started — and immediately stopped — missing LAMs in jet chamber (br 7 cr 1)
Missing lams everywhere in 67, but all tests OK (LAMTEST, SLOT-PIO). And suddenly it is OK again.
Start R 20164
μ-crate 6 often missing. Reachable, sometimes in Camac-Crate, sometimes only in Rucksack.

17^{22} No Triggers for no good reason — fixed by PAUSE/CONTINUE
17^{25} IBM online error check 2 ×2
Then N50 BUSY
Try AB-N50 — start new run — BAD EVT STRUCTURE
NO HEAD BANK
IBM online error check

17^{49} JDAS readout error 44 DMA Timeout br 3 cr 1 : T2, T3 in cur Makes a change from 33 & 53.
Then another NO TRIGGERS cured by pause/continue
18^{00} Complete collapse of Nord. Most of colour TV info scrambled. Run 20166 ended (3113 triggers)

18^{35} Run 20167 stopped VTX-HV changed to <u>1425/1550</u>
18^{40} Run 20168 started
19^{40} Run 20169 (and fill) stopped with N50Busy hangup. Afterwards all ~~[illegible]~~ produced Bank structure error (N50 writes N50S on top of Plessey bank). Debug print for Howard produced. Then rebuilt system, no way to run with N50 without further errors. Now wait for beam (Kurze Unterbrechung).

Processors ON/OFF N50	MIP	TOF	FAMP	⟨L⟩ $10^{30}cm^{-2}s^{-1}$	Bhabha $\int Ldt$ nb^{-1}	$\int Ldt$ exp, energy	IBM/Tape OUTPUT	At Run Start ID (μA)	At Run Start TOF (V)	ONLINE REJ SUB MIPROC T_2 %	ONLINE REJ NORD 50 T_1 & T_2 %	Σ Bhabha	MH	E_{beam}	Mag. Field	Remarks

4.4.85

0^{00} Dieckmann + Lamoileanen on shift.
We are running with OLD-N50DAR on advice from J. Olsson. No more "N50-Busy" + "Bad event structure" occurred. Very frequent missing lams from vertex chamber + system watchdog flags.
Muon crate 6 sometimes resists resetting, sometimes not.

8^{00} A. Finch and H. Riesebeg on shift.
Short Break : It is a power problem. Restart expected for about 9 o'clock
8^{12} Gas check done
8^{57} "Injection", Magnet → 6300
9^{40} "Magnetstrom ist geerdet"
10^{20} PKR says : Es wird spannend, keep Magnet on
11^{00} Beams Start Run 20176 I⁺ = 4.9 I⁻ = 5.1 Triggerrate(cor) ~ 4.5 Dead time 20-25%
11^{00} "muon crate 6 missing" cured, problem was bad contacts PWA
11^{13} Besides many ERRORS : JDAS ERROR 53 System Crate Watchdog PARMS 000424 (1024 / 002 / 202) 140204
1 ERROR : ERROR 37 IOX ERROR Address 111151 Level 8

11^{25} Beam conditions became worse
ID-Anode overcurrent (slow trips) and VTXC overcurrent → we cannot run
PKR is optimizing
11^{50} Beam conditions better : ID mean anode current/cell back to 1.6 μA
~~12 20 ERROR -2 for Histogram~~ VTXC (1475V) Currents still high, but no trips. We continue run.
[Limit of Instrument 15μA, slow Trip at 28μA]

12^{20} ERROR -2 for Histogram 112.
(VTXC Mean hits/wire side) ** NO SUCH HISTOGRAM **
Standard histograms stops at that point. Due to old-N50DAR ? yes!
12^{45} VTXC Fast trips
Luminosity is low L = 1×10^{30}, specific Lumi only ≈ 0.9×10^{29}
13^{25} EXIT to cure Histogramming problem. No change
13^{30} Beams lost. Leak at transmitter Syndrotron Sector 8
Problems transmitter East hall in PETRA
Magnet → 1500 A
15.33 Injection starts, Magnet → 6300 Fan unit of TOF Quad Discriminators makes some noise

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 $E_{LAC} \geq 6$ GeV	T_2 BIT 17 2T · $E_4 \cdot \geq 2$TR

4.4.85 16^{00} ~ Felst & Kawagoe on shift

16^{30} Gas checked.

18^{25} R20179 starts

'BAD EVENT STRUCTURE'

and 'IBM ONLINE-JOB ERROR CHECK' occurs frequently.

18^{40} Jan Olsson during some hunting for CAMAC-errors no data to IBM

In case Branch 4 Crate 6 gives MISSING LAM pull out start cable of DC8 #89 (wires

19^{37} Beam loss

21^{02} new fill ready $I^- = 4.5$ mA / $I^+ = 4.2$ mA / TOF = 1.4 V

continue CAMAC test no data to IBM

2145 Impossible to take data this evening, N50 errors. Furthermore Branch Cayl 1 moved to Br 5, Br 5 to Br 1. It has however a broken pin and has to be removed again. Br coupler 5 works fine in its place (i.e. the previous coupler nr 1).

Hic Finis est curarum...

22^{30} beams dumped, magnet off, pump for magnet cooling water off (for heat shield still on)

yet time isolator off

9.4.85

8^{00} L. Becker & H. Mills

8^{30} Temperature alarms on beampipe - call Herr Seidel

Warning: Disconnected loudspeaker of Krebbiel's box.

15^{00} Runs 20181/20182 with Pulser-data for VTC to Tape JDAS03

N50 happenings - Test runs have not revealed any problems (of course).
If b-dam arrives in the night and there is no way to get the Nord-50 to behave properly then CONF (DAS) ZDAS0 (ZDAS Ø) should be used. The result will be no run summary, no sensible YSPY, no N50 monitoring or killerins. HER

Processors ON/OFF N50	MIP	TOF	FAMP	<L> 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 MIPROC T_2 %	ONLINE REJ NORD 50 T_1 & T_2 %	Σ_{Bhabha}	MH	E_{beam}	Mag. Field -1-gauss	Remarks

16^{00} Bethke & Hardt on shift

17^{40} "Injection". PKR wants our magnet. Does not rais manually. Phone HK1.

18^{37} Magnet ok, now up to 6300.

23^{30} PKR announced "SHORT BREAK" (in the mean time 2 fillings were already)

10-4-85 0^{00} J. WAGNER & FINCH ON SHIFT.

~0^{15} → INJECTION

0^{21} → SHORT BREAK

4^{30} → New fill ready TOF rate off scale

4^{47} → TRY TO START RUN → VERTEX CHAMBER NEEDS TO BE RESET FIRST → START RUN → Z-CHAMBER WASN'T TURNED ON (STEADY GREEN LIGHT, THOUGH) → RUN ABORTS Z, U, & I-DCS ALL ON → START RUN MANY JDAS READOUT ERROR 52 → CONTROL WORD 00000 IMMEDIATELY → BEFORE WE CAN DO ANYTHING, LOOSE BEAM. ID + Z chamber trip alarms.

JDAS readout error 52 is not in the JDAS folder! What is it?
→ HV of jet-/vtx-/z-chamber is down, chamber tripped

5^{07} Short Break

8^{00} Kado and Warming on shift
gas check OK

8^{15} new fill ready, smooth running, acceptable backgrd.

10^{08} vtx d. tripped (anode current Ø3)

10.38 with Run 20188 anode voltage of VtxC raised to 1500 V!

10.54 beams lost. No VtxC-trips so far.

12.26 faulty DC8 exchanged, wire# 1312-1319 (reg. 13 cell #3, wire 1..8) SFS

13.00 Krebbiel did A.T. Crate Controller swap action. Branch 7 Crate 4 (Rack 13, 2nd from top) Removed Jorway S.N. 426, II. Instr. 3810
Inserted " " " 3811
Branch 6 Crate 7 (Rack 13, upmost) Removed Jorway S.N. 430, II. Instr. 3814
Inserted " 423, " 3804
PIOSLOT-Test & LAMTEST O.K. several times. ID people please check data EL from their crates. Krebbiel

14.10 JDAS Error 45 MP-16 analysis incomplete YY = 1

RUN	DATE	START	STOP	AT RUN START I^+	AT RUN START I^-	DEAD TIME (%)	TIME (sec)	RECORDS IN	RECORDS OUT	ALL $\times 10^6$	$T\emptyset$ REJ $\times 10^6$	T_1 ACC SUM	T_2 ACC SUM	T_1 Bit 2 $E_{LC} \geq 6$ GeV	T_2 BIT 17 $2T \cdot E_+ \cdot \geq 2$ TR
20185	10.4.85	8:15	8:54	4.34	4.77	21.2	2282	8002	4223	594	126	5054	3749	1421	25
20186	"	8:54	9:40	3.96	4.47	18.9	2564	8002	4229	667	126	4835	3412	1159	27
20187	"	9:41	10:37	3.56	4.04	14.5	3133	8002	3830	875	118	4782	3895	1115	26
20188	"	10:38	11:00	3.79	3.64	15.8	1196	2784	1325	311	49	1660	1419	358	9
20189	"	14^{12}	14^{21}	4.37	5.12	26.6	202	613	352	52	14	352	346	69	2
20190	"	18^{05}	18^{37}	4.02	4.08	18.3	1726	4885	2769	449	82	3541	2080	900	12
20191	"	19^{55}	20^{07}	4.83	4.87	17.2	698	2212	1286	182	31	1409	1097	330	5
20192	"	20^{11}	20^{12}	465	4.71	22.0	58	198	130	15	3	120	94	34	4
20193	"	22^{27}	23^{02}	4.60	4.83	18.3		4676 5580	2570						
20194	"	23^{16}	00^{20}	4.00	4.40	15.6	3261	8002	4357	848	133	5076	4471	1258	46
20195	11.4.85	00^{20}	01^{32}	3.45	3.86	13.5	3306	8002	4160	861	116	4897	4734	1243	40
20196	"	132	226	2.97	3.37	11.5	2510	5517	2787	653	75	3476	3299	864	23
20197	"	308	415	4.66	4.70	17.4	3491	8002	4088	909	158	4694	4965	1160	37
20198	"	415	5^{35}	3.95	4.12	12.8	3629	8002	3986	945	121	5083	4744	1261	34
20199	"	5^{35}	646	3.35	3.56	12.0	4020	8002	3788	1047	125	5170	4726	1148	28
20200	"	646	656	2.96	3.17	10.0	527	1034	483	137	13	1266	586	175	3
20201	"	721	756	~~2.64~~	~~2.85~~	11.5	2008	3735	1679	522	60	2475	2127	562	7
20202	"	756	823	2.64	2.85	9.7	1516	2757	1181	394	38	1875	1500	392	12
20203	"	947	10^{21}	4.99	4.78	18.4	1949	5049	2884	507	93	2818	3112	681	23
20204	"	10^{23}	11^{21}	4.58	3.77	16.8	3242	8002	4312	844	142	4599	4916	1126	39
20205	"	11^{21}	12^{18}	3.96	3.28	15.1	3408	8001	4300	887	134	4783	4901	1218	44
20207	"	18^{16}	19^{13}	4.48	4.50	14.3	3376	8002	4479	878	125	4753	4808	1069	55
20208	"	19.15	19.54	4.02	4.04	13.4	2302	5277	2905	599	80	3136	3267	709	33
20209															
20210	"	20.28	21.01	3.34	3.36	11.6	1934	4247	2448	503	58	2585	2694	608	18
20211	"	21.22	21.44	3.22	3.24	21.3	1254	2257	1143	326	69	1397	1378	334	11
20212	"	21.51	22.02	2.97	1.67	8.8	612	1077	450						
20213	"	22.22	22.38	2.83	1.47	9.6	929	1646	711						
20214	"	22.44	0.05	2.76	1.43	8.8	4889	7991	3266	1271	111	5441	4898	1116	33
20215	12.4.85	0.12	0.18	2.49	1.28	9.6	296	498	201						
20216	"	0.24	0.41	2.46	1.26	7.6	1029	1693	680	267	20	1140	947	220	7
20217	"	0.45	1.22	2.40	1.23	7.7	2206	3479	1399	574	44	2422	1994	499	13
20218	"	1	1	2.30	1.18	8.0	1652	1659	632	274	22	1125	972	187	64
20219-231		Tests													

Processors ON/OFF N50	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 [-kG]	Remarks
ON	ON	ON	OFF	1.37	3.62	320.61	IBM	1.4	1.6	28	50	41	1	21.800	4067	~~V26 trip~~
"	"	"	"	1.13	3.62	324.23	"	1.0	0.95	30	50	41	1	"	4066	
"	"	"	"	1.15	3.45	327.68	"	1.0	0.85	33	55	39	0	"	4069	
"	"	"	"	1.14	0.80	328.48	"	"	"	37	55	9	2	"	4070	beams lost
"	"	"	"	1.10	0.22	328.70	"	1.3	2.6	48	46	2	0	"	4070	beams lost
"	"	"	"	1.46	2.53	331.23	"	1.0	1.4	?	545	37	1	"	4066	Beams Lost
"	"	"	"	2.29	1.60	332.83	"	1.1	1.3	46	44	18	0	"	4067	
"	"	"	"	1.60	0.09	332.92	"	?	?	50	40	5	0	"	4066	beams lost
"	"	"	"		4.42	337.34	"	1.2	1.4					"		Nord Ring up. No run summary
"	"	"	"	1.50	4.68	342.02	"	1.0	0.9	49	48	53	2	"	4.063	
"	"	"	"	1.15	3.53	345.55	"	0.9	1.1	50	51	40	0	"	4.066	
"	"	"	"	0.93	2.30	347.85	"	0.8	1.6	52	52	26	0	"	4.065	Beams lost
"	"	"	"	1.23	4.42	352.27	"	1.1	1.4	47	52	50	0	"	4.068	
"	"	"	"	1.00	3.62	355.89	"	1.0	0.9	52	53	41	1	"	4.067	
"	"	"	"	0.84	3.09	358.98	"	0.7	0.7	52	56	35	1	"	4.069	
"	"	"	"	0.86	0.53	359.51	"	0.6	0.7	50	56	6	0	"	4.070	IBM List Lost
"	"	"	"	0.75	1.15	360.66	TAPE04	0.6	0.6	53	58	13	0	"	4470	Currents wrong on tape
"	"	"	"	0.61	0.97	361.63	IBM	0.6	0.6	58	60	11	0	21.802	4067	
"	"	"	"	1.62	2.74	364.37	"	1.2	1.3	49	47	31	2	21.800	4.070	
"	"	"	"	1.26	4.08	368.45	"	1.1	1.3	47	49	38	0	"	4470	
"	"	"	"	1.04	3.89	372.34	"	1.0	1.0	50	48	44	1	"	4070	
"	"	"	OFF	1.62	4.86	377.20	"	1.0	1.1	48	47	55	2	"	4067	
"	"	"	"	1.38	2.47	379.67	"	1.0	1.0	49	36	28	0	"	4067	
"	"	"	"				"	0.8	0.8							Comp hangup at end of S.C.
"	"	"	"	1.09	2.65	382.32	"	0.6	0.7							
"	"	"	"	0.78	1.24	383.56	"	0.75	0.7	52	51	14	1	"	4069	Partial beam loss
				0.30	0.35	383.91		0.8	0.55			4	1	"		} T. Olsson improves things
				0.30	0.27	384.18						3	0			
"	"	"	"	0.24	1.15	385.33	"	0.4	0.4	56	62	13	1	"	4067	
				0.22	0.09	385.42						1	0	"	4067	Vertex } ch trip
"	"	"	"	0.16	0.09	385.51	"	0.3	0.4	50	62	1	0	"	4066	Vertex }
"	"	"	"	0.15	0.62	386.13	"	0.3	0.4	54	62	7	1	"	4067	Vertex }
"	"	"	"	0.11	0.27	386.40	"	0.3	0.3	54	64	3	0	"	"	

System Data and Nord Troubles

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 $E_{LE} \geq 6$ GeV	T_2 BIT 17 2T · $E_T \cdot \geq 2$TR

14.16 All chambers hard trip. TOF-rate fluctuating

VTxC again 1475 V (HV)

14.19 again all Chambers tripped hard, beams lost.

16⁰⁰ Konvoye, Test on shift injection

17⁰⁰ still injection but no beams, magnet → 2000 A, people work on the DESY-Petra to beam transport

17³⁰ beam in PETRA magnet back to 6300 A

18⁰⁰ beams at 21.8 GeV, reasonable background conditions

frequent missing Lam branch 1 crate 1

18²⁵ Yspy complains about not hits in TOF-TOC, which are known to be further

has the program been reloaded with an old file recently? – Don't know who set this bit I reset it. HERT

18⁴⁰ beams lost, all chamber hard trip

18⁴⁵ yes check, O.K.

20⁰⁰ new filling, DL8 fixed by S. Bethke, new run started

20⁰⁶ ID soft trip

After H.V. resetting, CONTINUE/PAUSE doesn't work. so ~~started~~ started new Run.

20¹² beams lost.

22²⁷ beams ready start Run 20193.

23¹⁰ Vtrd Ramp up, reloaded (the error was, that the terminal was erroneously switched off line)

23³⁰ many VTX-chamber trip – beams somewhat unstable

11-04-85

00⁰⁰ J. Spitzer, I.A.I. Skard on shift.

00²⁴ JDAS ERROR 45 – MP-16 analysis incomplete; YY=1. start at 0122

01²³ — " — 46 — " — out of sequence; YY=1

6³⁵ Histograms for "Forward counters" show suspicious "holes"! Something for an "expert"?

7¹⁵ IBM link down – err 53 – start new run on tape while waiting for F58 to show up for the day's work... PETRA information link down also, so I^+, I^-, E_B entered manually. [Currents entered erroneously in mA, not μA

Suggestion: Why not change the units in which information should be entered to conform to the units on the PETRA display (i.e. mA, GeV)? Many errors could be avoided this way!

└ been suggested before. D. Cords did not want it. Message request UA etc

Processors ON/OFF N50	MIP	TOF	FAMP	<L> 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 MUPROC T_2 %	ONLINE REJ NORD SU T_1 & T_2 %	Σ_{Bhabha}	MH	E_{beam}	Mag. Field −1 segment	Remarks

7⁴⁵ Bartel & Komamiya on shift

7⁵⁵ IBM back

8¹³ Missing LAM, Br=4 Cr=86, ID ring?

8²⁰ Beams lost, 3 chambers tripped

Sould plotter out of order. It does hardcopies only after a series of manipulations like power on-off, fuel, home.

9⁵⁵ Missing LAM Br=1, Cr=1 B.P. chamber occured quite often (as usual.)

10¹⁵ Vertex ch. tripped

The readout of the HV trip reason seems not always to work. Beampipe chamber trip gave control word zero!

12¹⁵ beams lost detector trips

Run 20206 has no evts only 6 scaler evts.

Not clear yet what it is could be a broken power cable at Petra.

13³⁰ Run down magnet

Fault not yet found

15²⁰ e^+ injection started ramp up the magnet to 6300 Amps.

16⁰⁰ H. Mills & R. Ramke on shift – (for B. Naroska & H. Krehbiel)

16³⁵ PETRA beams lost as soon as they tried to ramp. Decided this was a good time to backup the disc. min

16⁵⁰ Short break – HF trouble in DESY – magnet => 2000A

17.50 "Injection" on screen.

18.07 beams

Adjusted TOF thresholds from 150 mV to 130 mV. The TOF signal increased from 1.1 V to 1.4 V, when the gain is background adjusted back to make it like before.

19.17 Not possible to look at events: typewriter says "strange entry codes." Reload ZDAS, it still doesn't work, wait for Howard

20.42 J. Olsson & H. Krehbiel & Kleinwort think they have fixed missing LAM business of Vertexchamber by cleaning a contact.

RUN	DATE	START	STOP	AT RUN START I^+	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 Bit2 $E_{LG} > 6$GeV	T_2 BIT 17 $2T \cdot E_4 \cdot \geq 2TR$

21.51 Partial beam loss. Petra is not able to refill so we keep beams.

22.14 LG power supply Barrel 4 tripped.
Cannot find Kawagoe and no spare Fluke.
We exchange the broken one and replace it by the old beam-pipe supply. (They both weigh 1 ton!!)

Run RI - HB, which is hopefully the program to reset the High Voltage. that's right.

11.4.85

0^{00} N Magnussen & B Naroska (for H Mills) on shift

1.27 Magnussen goes to check gas

Several missing lams
branch 4, crate 6, ID Ring 2

1.40 Vertex chamber tripped — Event display worked the first time I tried!
1.45 Beams dumped - no refill possible until 15:00!

Magnet turned off.

8^{00} Finch & Kawagoe on shift
8^{20} Gas Check Done

I (K.K.) checked the "broken" power supply. But I found nothing was wrong.
It works as normal. We don't have to repair it.
The 'New' Barrel 4 power supply was set H.V. = 1.9706 kV.

Sorry. it is really broken. After 10~20 minutes, it tripps.
'OLD' Barrel 4 HV supply (You are right, Dr. Naroska. K. Kawagoe)

12^{00} N10 broken
14^{00} Magnet to 6300 A (PETRA INJECTING)

15^{37} PETRA HAS BEAMS but we have no N10 so can't take data.

16^{00} Cartwright & Weber on shift
16^{40} Gas check done
20.35 There was a magnet alarm at ≈ 19.00 hrs. while PETRA people going into ring; found magnet at zero amps; K-people later on found 10 kV off; now reset manually to ~ 1400 A; wait till PETRA runs and NORD fixed; so far still "injection" and (Olsson + Delfs working on NORD)

Processors ON/OFF N50	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)	TOF (V)	ONLINE REJ SUB MIPROC T_2 %	NORD 50 T_1 & T_2 %	Σ Bhabha	MH	E_{beam}	Mag. Field	Remarks

22.40 NORD back in operation; Olsson and Delfs leave; they leave strict instructions:
DO NOT use tape unit, since it will probably kill the NORD!

PETRA is being refilled, after beam loss during acceleration

Hint to J Olsson

THIS SPACE RESERVED FOR SOME ACCOUNT OF WHAT WAS DONE TO THE NORD

Tried to copy current system disc (BACKUP C) on 'blue' drive to corrupt system disc on 'orange' drive - got transfer error. Swapped disc packs & disc numbers - this time it worked.
Placed SYSTEM disc on blue drive, changed this to unit Ø & loaded system. OK
changed run number to 20219!
The Nord fault was localized to a faulty card: "Clock & Parity error", B10. With the faulty card, wild accesses seemed to happen on the bus. A suspicion on the tape drive or tape drive interface remains, tape drive should not be used until Monday (Delfs back from holidays, we can investigate more at ease and a N10 from Tasso is also available, for spare parts). J.O.

23^{10} We have beam — but since the system disc and one backup were corrupted in the Nord crash, and the remaining backup dates from before Krehbiel's NUBOX, backing up our one usable system disc takes priority!
23^{25} Copy of system disc successfully completed.

Full readout did not work - lots IOX errors. No obvious crate offline
Tried JETC test using trigger source 3003B. At first thought that Branch 4 was OK - as soon as put any other branch or part of branch in IOX errors came. The more JETC crates in the readout the more IOX errors came.
Finally even errors came with branch 4 only in readout. Logical attempt to trackdown trouble fail.
Full data taking but with branches 4-7 turned off produces no IOX errors but doesn't prove much.- its unclear wether its the JETC readout or just volume of data thats the trouble
As a last resort rebuild the Nord system and JDAS. Fault still there.

If one ignores the IOX errors things appear to work - there are no obvious missing DL8s. A few "False interrupts from DL8" appear - crate 1 in branches 4 & 5.
At risk of making a diagnosis - I'd suggest it was something wrong still in the Nord-10.
HEM

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 $E_{LG} > 6GeV$	T_2 BIT 17 $2T \cdot E_4 \cdot \geq 2TR$
74															
20232	13.4.85	21.34	21:53	2.69	2.92	10,9	745	1421	665	194	21.2	911	808	195	7
20234	"	22:02	22:03	2.57	2.80	9.1	30	82	51	7.7	0.7	40	~~40~~ 39	~~39~~ 7	0
20235	14.4.85	0:21	0:32	4.26	4.54	10.5	605	1327	647	157	16	800	792	163	6
20236	"	0:35	01^{38}	4.26	4.54	15.6	2999	6180	3267	781	122	3688	3815	825	24
20237		2:29	8:47	4.32	4.66	13.1	3745	8001	4075	975	128	4762	5108	1023	31
20238	"	3 47	05^{07}	3.21	3.78	10.5	4240	8002	3827	1103	116	5239	4782	1078	36
20239	"	05^{07}	05^{47}	2.65	3.22	11.1	2263	3829	1770	573	64	2535	2288	533	11
20240	"	07^{32}	8.36	4.44	4.52	12.6	3666	8002	4259	954	120	4771	5060	7103	~~357~~ 25
20241	"	8.37	9.27	3.79	3.97	12.8	2930	6267	3237	762	97	3847	3906	839	~~256~~ 25
20242	No	seeing	run	because	of	NORD	error								
20243	"	9.33	10.44	3.35	3.53	11.5	4214	8001	3865	7097	726	5204	4853	7098	~~30~~ 34
20244	14.4.85	10.45	11^{34}	2.91	3.09	9.1	2422	4462	2330	630	57	2962	2580	540	10
20245	"	12^{55}	13^{00}	4.40	4.39	13.5	274	736	551	71	10	366	545	65	3
20246	"	13^{01}	13^{59}	4.34	4.32	20.3	3287	8002	5906	854	174	3995	5863	840	31
20247	"	14^{00}	14^{00}					41	34						
20248	"	14^{01}	14^{19}	3,75	3,76	"34,9"	1047	1713	888	273	95	1002	1036	244	4
20249	"	14^{22}	15^{16}	3.58	3.59	10.8	2900	5638	2708	755	82	3551	3431	722	25
20250	"	17.17	18.34	4.19	4.35	11.4	3956	7702	3810	1029	117	~~4684~~	5123	858	30
20251		18.55	19.56												
20252	"	19.58	21.11	4.28	4.56	12.6	3856	8002	4130	1032	130	4558	5034	869	37
20253	"	21.11	22.22	3,68	3,98	13,9	4224	8002	3825	1089	153	5023	4915	974	21
20254	"	23.23	23.40	3.23	3.51	10,5	4305	8002	3648	1120	118	5208	4782	977	34
20255	"	23:41	0.42	2.81	3.08	10.6	3192	5629	2562	831	87.9	3721	3359	774	14
20256	15/4/85	1:36	1:40									5013			
20257	"	1:47	2.51	4.42	4.73	13.8	3537	8002	4258	920	127	4765	4974	1018	32
20258	"	2:52	4.02	3.80	4.08	14.1	3879	8001	4017	1009	142	5070	4790	1114	43
20259	"	4:02	5:20	3.27	3.53	11.6	4301	8002	3651	1118	129	5165	4754	1039	28
20260	"	5:21	5:28	2.82	3.06	9.9	401	794	365	104	10	502	444	97	2
20261	16/4/85	19:19	19:46	3.98	3.98	~~18~~ 59	1070	3307	1802	278	44	~~2275~~	1520	619	10
20262	"	22:09	22:55	6.01	5.92	38.9	2499	7999	5187	650	253	4101	4971	1205	306
20263	"	22:55	23:12	5.22	5.24	37.3	951	2881	1805	248	92	1375	2019	379	16
20264	"	23:13	0:01	4.99	4.99	31.2	2615	8002	5231	680	212	4091	5330	989	43
20265	17.4.85	0:01	0:22	4.43	4.44	21.3	1193	3316	1995	310	66	1733	2236	446	18
20266	"	0:23	1:18	4.22	4.23	14.7	3289	8001	4494	856	126	4570	5283	1050	43

PROCESSORS ON/OFF N50	MIP	TOF	FAMP	<L> 10^{30} cm^{-2}s^{-1}	Bhabha $\int Ldt$ run nb^{-1}	$\int Ldt$ exp. energy nb^{-1}	IBM/Tape OUTPUT	AT RUN START I (μA)	AT RUN START TOF (V)	ONLINE REJ SUM MUPROC T_2 %	ONLINE REJ N50 T_1 & T_2 %	Σ Bhabha	MH	E_{beam}	Mag. Field	REMARKS
75																
ON	ON	ON	OFF	0,82	0,35	386,75	IBM	0.6	0.5	49	56	4	1	21,800	-4,060	Run # 20233 missing
"	"	"	"	1,39	0,00	386,75	"			41	49	0	0	21.802	-4.059	Beams dumped
"	"	"	"	2.10	1,06	387.81	"	1.1	0.9	46	54	12	0	21.800	-4.060	vtx-chamber trip
"	"	"	"	1.74	6.71	394.52	"	1.0	0.9	48	51	76	2	21.800	-4060	BEAMS LOST
"	"	"	"	1.66	6.22	400.74	"	1.2	1.0	49	52	55	0	21.800	-4060	
"	"	"	"	1.28	5.21	405.95	"	0.8	0.6	52	55	59	1	"	-4059	
"	"	"	"	0.97	2.83	408.78	"	0.6	0.5	52	56	32	1	"	-4058	BEAMS DUMPED.
"	"	"	"	1.92	7.$\overset{16}{2}$	415,94	"	1.3	1.1	48	50	87	7	"	-4061	Normal Run End
"	"	"	"	1.81	5.48	427.42	"	0.9	0.75	49	57	62	3	"	-4060	BP-el. Trip.
				1.42												
"	"	"	"	~~5.83~~	5.83	427.25	"	0.7	0.6	52	54	66	0	"	4062	
"	"	"	"	1,24	2.47 ~~3.07~~	~~429.22~~ ~~430.21~~	"	0.6	0.5	51	50	28	1	"	4063	stop for the TEST
"	"	"	"	2,32	~~5.86~~		"	1.0	0,9					"		Nonsens T1 postp. deactiv.
"	"	"	"	1,82	5.83	435,55	"	?	?	40	28	68	2	"	4061	T1 postp. last run, see nordp.
"	"	"	"		0,09	435,64	"	~~0~~	~~0.7~~					"		Stand T1 postp. but no rejection
"	"	"	"	1,32	1,06	436,70	"	0.8	0.7	43	51	12	0	"	-4063	"all standard again"
"	"	"	"	1.42	3.89	440.59	"	0.8	0.65	49	54	44	0	21,800	-4063	beam dumped
"	"	"	"	1,34	4.51	445.10	"	1.0	1.0	49	54	51	0	21.800	4060	Lost Beams
								1.0	1.0							ob.pyr no counts
"	"	"	"	1,59	5.57	450.67	"	1.0	1.0	49	51	63	3	"	-4060	
"	"	"	"	1.18	4.85	455.62	"	0.8	0.7	48	55	56	0	"	-4063	
"	"	"	"	1.10	4.33	459.95	"	0.7	0.6	51	52	48	1	"	-4063	
"	"	"	"	1.01	3.53	463.48	"	0.6	0.5	52	57	40	0	"	-4060	Beams lost
"	"	"	"											"	-4060	Nord hang up
"	"	"	"	2.15	6.71	470.19	"	?	?	47	50	76	2	"	-4060	
"	"	"	"	1.71	6.80	476.99	"	0.9	0.7	49	52	77	2	"	-4060	
"	"	"	"	1.25	5.30	482.29	"	0.8	0.6	50	57	60	1	"	-4060	
"	"	"	"	0.99	0.27	482.56	"	0.6	0.5	49	58	3	1	"	-4061	Beams dumped
ON	ON	ON	OFF	2.22	2.65	485.21	"	~~8~~ 1	1.0	45	48	30	0	21.80	-4065	Beams lost
"	"	"	"	3.04	6.89	492.10	"	1.4 ↔ 1.5		38	38	78	1	21.800	-4063	
"	"	"	"	2.64	2.21	494.31	"	1.2 ↔ 1.5		41	41	25	0	"	-4064	
"	"	"	"	2.60	5.92	500.23	"	1.1 ↔ 1.4		41	38	67	0	"	-4065	
"	"	"	"	2.68	3.27	503.30	"	0.9 ↔ 1.3		44	43	37	2	"	-4063	
"	"	"	"	2.35	7.33	510.83	"	1.1 1.0	0.8 0.7	46	47	83	1	"	-4063	

RUN	DATE	START	STOP	AT RUN START I^+	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 Bit2 $E_{LG}>6GeV$	T_2 BIT 17 $2T\cdot E_4\cdot\geq 2TR$

13.4.85

0.00 Diehmann & Laurikainen
We get IBM ERR 52 but IBM works and TASSO has no problem with link.
Suspect N10. No Data taking possible (IOX Errors)
~~[illegible]~~
Runs 20220 – 20222 → Junk
At request from Cello we keep the magnet running

08.00 D. Clarke, U. Schneekloth
Phoned Jan, tried a few things, but no luck. Jan will come in.
9.50 gas check done

16.00 Jan Chrin and H. Rieseberg on shift.

J. Olsson and H. Krehbiel are working on the Nord and CAMAC systems
still IOX Errors.
J. Olsson calls Herrn Rehlich at home, He will come at 17h

From TV-Screen: Petra fillings today ... till 6^{10}, 6^{50}–11^{50} (5 → 3 mA), 13^{40}–15^{40} (5 → 4 mA)

17^{30} Beams

J. Olsson, H. Krehbiel and Herr Rehlich work very hard: Remove errors from System Crate and from the Nord
↓ Reserved for J.O.

System Crate: Executive controller and PIO-NIOC were found defective, replaced.

N10: The IOX errors had a simple explanation, namely the internal time constant of N10. Since we had the new CPU cards from "Keller Nord", we had a time constant of ~5 μsec, should be ~ [illegible] μsec
5 μsec is barely enough for the system Crate + Branch operation cycles
Moreover a subtle error was found, remaining since yesterday: The bus control which is needed for the output transfer (IBM or Magtape), made errors, noted only in datawriting to IBM and not in testruns. These cards were also replaced.

The reasons for all this misery is of course not known.

The data taking now shows the old errors, (missing LAM, but rare) notably the sudden hanging of Nord: No event interrupt arrives at the Nord, although there "is" one in the trigger box. Pause/Continue helps. The nonsens behaviour at beam loss or detector trip interrupts is under study.

Processors ON/OFF N50	MIP	TOF	FAMP	<L> 10^{30} cm^{-2}s^{-1}	Bhabha $\int Ldt$ nb^{-1}	$\int Ldt$ exp, energy	IBM/Tape OUTPUT	At Run Start ID (μA)	TOF (V)	ONLINE REJ SUB MIPROC T_2 %	NORD 50 T_1 & T_2 %	Σ Bhabha	MH	E_{beam}	Mag. Field	Remarks

21.34 Bravo! It works again, Run # 20232 is started
22.03 Stop for refilling

14.4.85
0:00 Hedgecock + Heinzelmann.
0:20 New fill ready. start run.
05^{30} MISSING LAM BR 4 CRATE 6 ID R2 } APPEAR WITH HIGH REGULARITY.
" " BR 1 " 1 B.P. CHAMBER }
NO TRIGGERS APPEARED FOR NO APPARENT REASON – PAUSE/CONTINUE! CLEARED FAULT.
During night shift within 5h we counted 14 Vertexchamber trips

08^{00} Kawagoe + Krehbiel on shift
~~08~~ 08^{20} Gas check done.
9.26. Funny event; after BPC Trip and continuing the run the Colour TV [illegible] stood still with the run still running, i.e. events taken.
Trying EXIT did not work. Reloaded NORD
~~[illegible]~~ 9.30 etc. Apart from the other well-known errors several times the msge BR2 LG (BARREL) > 250 Hits on Colour TV
10.00 permanent Message IBM ERROR 00 on Col TV. ~~But~~ But everything runs smoothly. This kind of error msge is not listed in the oper. manual. Olsson is coming anyway, so we continue.
10.40 Msge did not go away after run stop. EXIT and RESTART ZDAS helped.
→ If I recall correctly, IBM error 00 is not an error! We had this once before – 'explained' as program corruption(?) CKB.

R20246 New T1/postpone trigger test run: T1P pattern 073615B (stand: 071615B)
T1p: Prom: (1): Septant coplanarity * ≤ 5 septand * T1 Acc " no change
*≥1Tof * ≤ 7TOF * 1Tr all T2 enable, coinc. no change (already enabled)
This run is sent to IBM, for test purposes.
T1 acc Prom (?) sept coplanarity * no veto septants * < 1TOF
Plessey: only zvtx rejection
N50 ~~only~~ Bad T2 triggers, and Pattern rec. rejection off.
Deadtime at Begin of fill (> 4 mA) ~ 15% (Total Deadtime higher, due to "No triggers")

From R20246 onwards, illegal JETC data occurs occasionally. 1 case is BS: C5, last DLB, but also others have been seen but not caught (event display prints "nonincreasing wire nr") – ~~[illegible]~~ HBH

16^{00} Clarke + Schmidt on shift.

16^{15} Gas check done PARMS 00002 140204

RUN	DATE	START	STOP	AT RUN START I+	I−	DEAD TIME (%)	TIME (sec)	RECORDS IN	RECORDS OUT	ALL *10^6	TØ REJ *10^6	T1 ACC SUM	T2 ACC SUM	T1 Bit 2 E_LG > 6 GeV	T2 BIT 17 2T · E4 · ≥2TR

14.4.85

16^{00} Controller-Swop Action in Branch 4 Crate 4 (Rack 10 2nd from bottom)
Withdrawn Jorway 70 A Ser. No. 422, II. Inst. 3806
Inserted " " 425 " 3809. Fault in it could not be reproduced. Contacts cleaned, some suspicious solderings re-soldered.

17^{17} Beams
18.00 2 vertex ch. trips.
19^{24} Beams Lost
19^{55} New fill ready.

1 Error 33 missing LAM Branch 1 crate 1 - Beampipe Chambers / 3 minutes

22^{12} 2 vertex chamber trips
22^{45} " " "

15/4/85
0^{00} C. Bowdery & J. Hagemann on shift

0^{20} Gas check done.
0:35 Vertex chamber HV trip
1:40 Nord hung up at level 9. We noticed that the colour TV was not being updated and the Tektronix was not working. Soon after we tried EXIT but this was ignored. We restarted the NORD 10.
1:53 Z chamber HV trip
P. Mat & Co
7:44 ~~Kontroll~~ Techniker have switched off magnet

8^{00} Kawagoe

Transformer repair: new chokes will be installed by a Brandford engineer together with K-people.
No data taking for JADE. W. Bartel
9^{00} Gas check done.
16^{00} Barlow and Hellenbrand on shift Gas Check done
19^{15} fan of DL8 crate changed branch 5 crate 3

Processors ON/OFF N50	MIP	TOF	FAMP	<L>	Bhabha ∫Ldt nb⁻¹	∫Ldt Exp. energy	IBM Tape OUTPUT	At Run Start ID (μA)	TOF (V)	ONLINE REJ MIPROC T2 %	NORD 50 T1 & T2 %	Σ Bhabha	MH	E beam	Mag. Field	Remarks

16.4.85 ~~[illegible]~~ 0^{00} Bethke on shift
0:15 Gas checklist done.
0:20 Fan failure in crate with Jade lumi logic (above Br3, Cr5). Switch off, wait 10 min, on → ok
Petra had 2 beautiful fills, each > 3 hours!
0:40 Again fan failure, exchanged Fan-unit.

3:50 Ramcke on shift

8^{00} D. Clarke + S. Komamiya

15^{00} Software for VTXC-Processors changed. Old version copied to (MPROC) BUP-VTX2160:TXLD C.K.
New Version ~~is~~ not yet loaded. (JDAS must be rebuilt first)
16^{00} S. WAGNER & KREHBIEL ON SHIFT
16^{20} GAS CHECKLIST DONE
17^{05} System rebuild started.
New version of Nord-50 program installed as default
Lorenz angle set to that for 7500A i.e. ~~−19.8~~ −19.8 (was −17.0) {Event display not yet changed}
Disc backup copy made. (HEM)

19^{00} The magnet is now back in operation, but still at 6300 A
tomorrow morning the primary lines of transformer have to be changed from 10 kV to 11 kV.
this operation needs an expert not available now.
19^{06} LORENTZ ANGLE SET BACK TO THAT FOR 6300A IN NORD-50.
Since R 20261 2 new rates are added in the "scal" Bank,
namely T1 acc and T1 postp.
19^{29} New run started Current 6300 A, Field −4067 G
22^{01} NEW RUN & FILL
22^{10} STILL MISSING LAM, BICI (~1/2-3 min)
22^{22} BP CHAMBER HV FAIL
22^{47} ALSO A FAIR # OF JDAS R.O. ERROR 45 - MP16 ANALYSIS INCOMPLETE: YY=1
23^{09} LOTS OF WATCDOG FLAG ERRORS → STOP RUN & START ANOTHER
23^{35} BP CHAMBER HV FAIL (JDAS R.O. ERROR 52)

RUN	DATE	START	STOP	AT RUN START I^+	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 $2T \cdot E_4 \cdot \geq 2TR$

Processors ON/OFF N50	MIP	TOF	FAMP	<L> $10^{30} cm^{-2}s^{-1}$	Bhabha $\int Ldt$ nb^{-1}	$\int_{EXP, energy} Ldt$	IBM/Tape OUTPUT	At Run Start ID (μA)	TOF (V)	ONLINE REJ SUB MIPROC T_2 %	NORD 50 T_1 & T_2 %	Σ_{Bhabha}	MH	E_{beam}	Mag. Field -1 kgauss	Remarks

17.4.1985

0^{00} Kawagoe and Kleinoort on shift

1^{45} Gas checked

1^{53} JDAS READ OUT ERROR 44 – DMA TIME OUT branch 2 crate 1 : Latches.
Run 20267 stopped, start next Run.

3^{15} New version of VTXC-Software loaded into Processors

4^{34} As soon as Run 20270 started, beams were lost. Only 14 trigger data were taken.

5^{40} in 10 seconds 5 × Missing Lam BR 2 CR 3 : TOF1

5^{45} Vertex Chamber soft trip

6^{20} I.D. & V.C. trip

7^{17} No Missing LAM's / WATCHDOG – ERROR in VTXC since Software change
But little bug in new Software (Pedestal adaption not correct) → old Software reloaded C.K.

7^{20} First 2 Missing LAM's in VTXC again

7^{22} Next 2 " "

8^{00} Barlow + Heinzelmann on shift.
Magnet current to be increased to 7500 amps Timescale unknown – it could take all day! So no datataking (again).

8^{10} Problem in new VTXC-Software fixed, new version reinstalled

From Run 20275 Vetoes:

2 TB6 NS :	< 7 TOF
2 TOF coll ±1	< 7 TOF
2 TOF coll ±3	< 5 TOF
Sept 1 ≥ 1 TOF	< 6 TOF

{ Bit 11 Rootpore } { Olsson not enabled. }

11^{00} Magnet now up to 7500 Amps.

14^{20} Magnet now said to be ok. Has been tested up to 8000 Amps.
Lorentz angle in Nord50 constants reset to 7500 Amps value.
Standard field in Magnet check parameters set to –4840 G.

15:25 IBM ERROR 80 No triggers → Pause Continue → run continues but message stays,
message stays also after starting a new run. } ← for H.E.M.

15:32 No triggers. White lamp on. Pause - Continue → o.k.

17.4.85

16.00 Narosha + Elsen (virtual) in spirit)

16.30 Gas check done

16.37 JDAS RO ERROR 45 MP-16 analysis incomplete 44 = 1

16.41 " (same)

16.55 " (same)

17.47 IBM ERROR 00

19.45 New filling.
Computer hangup : Run Started and Stopped at the same time
Restart Computer, then nominal field is 4150 again
Reset nominal field to –4850 G
Vertex ch. trip 2×

After 5 Vertex ch. trips phone H. Vado.
He instructs us how to reduce the voltage from 1475 to 1450 Volts
After that the anode current has gone to 80 μA* (before 90 μA*).
Seems to be more stable.
*) Meter in hardware-room! Divide by ~3 to get anode peak current. (HK)

20.24 Next trip

20.45 2× Missing Lam Branch 2, crate 4 (TOF2)

21.02 Z-chamber trip

Vertex ch at 1450 for runs 20281
20282

21.07 JDAS RO ERR 33 Miss Lam br. 3 crate 2 } all at once
53 Watchdog } + Illegal Cont Record
33 Miss Lam br. 1 crate 1 } on Color TV.

21.16 JDAS RO ERR 45 MP-16 analys. incomplete

21.33 33 Miss Lam br. 2 crate 4 (TOF2)

21.46 45 MP-16

22.25 33 Z-chamber part 1 missing LAM

23.20 45 MP-16 anal. incompl.

23:22 33 Miss LAM br 4 cr6 (10 R22)

33 Miss LAM Z-chamber part 1 followed by TOF 1

24.00 Phoned Howard to tell him about problems.
He advised to rebuild YECOPY (this is were ring violation bad occurred)
Maybe Display will now work.

RUN | DATE | START | STOP | AT RUN START I+ I− | DEAD TIME (%) | TIME (sec) | RECORDS IN | RECORDS OUT | ALL *10^6 | TØ REJ *10^6 | T1 ACC SUM | T2 ACC SUM | T1 Bit 2 E_LG ≥ 6 GeV | T2 BIT 17 2T· E4 ≥ 2TR
Processors ON/OFF N50 MIP TOF FAMP | <L> 10^30 cm^-2 s^-1 | Bhabha ∫Ldt nb^-1 | ∫Ldt Exp. energy | IBM/Tape OUTPUT | At Run Start ID (µA) TOF (V) | ONLINE REJ SUM MIPROC T2 % NORD-50 T1 & T2 % | Σ Bhabha | MH | E_beam | Mag. Field −1× gauss | Remarks

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. $E_4 \geq 2TR$
20267	17.4.85	1 19	1 52	3,74	3,76	14.0	1981	4255	2237	515	72	2462	2769	555	25
20268	"	1 55	3 06	3,49	3,50	11.6	4247	8002	3912	1105	128	4938	5039	1003	25
20269	"	3 06	3 10	3,06	3.08	9.6	159	373	183	41	4	236	179	38	1
20270	"	4 34	4 34					29	26						
20271	"		only		~~LE~~	LG	pedestals			Junk.		Don't	use	for	Analysis.
20272	"	5 33	6 27	5.12	5.67	31.7	2740	8001	5158	713	226	3634	5542	1039	54
20273	"	6 27	7 16	4.52	5.04	21.7	2909	8002	4794	757	164	3880	5500	1031	40
20274	"	7 20	8 00	4.09	4.57	16.0	2419	5994	3457	629	101	3241	4027	834	28
20275	"	14:33	15:25	5.83	6.02	27	2653	8002	4953	690	184	4125	5252	844	32
20276	"	15:26	16:16	4.89	5.18	22	2902	8002	4567	755	163	3830	5950	898	43
20277	"	16:17	17:11	4.25	4.60	16	3239	8002	4347	842	130	4146	5635	909	33
20278	"	17:12	18:16	3.73	4.05	13	3759	8002	3948	977	129	4524	5499	1005	29
20279	"	18:15	18:23	3.25	3.58	13	447	955	467	116	15	535	605	109	5
20281	"	19.47	20.56	5.62	5.65	31.0	2777	8002	4849	722	224	3546	6269	954	54
20282	"	21.05	21.57	4.50	4.54	19.6	3066	8002	4412	797	157	4022	5889	1000	85
20283	"	21.57	22.56	3.97	4.02	14.6	3546	8002	4022	922	134	4400	5606	923	20
20284	"	22.57	23.33	3.48	3.54	13.6	2159	4375	2110	562	76	2538	2960	841	14
20285	18. 4.85	1.03	1 55	5.98	5.90	28.3	2739	8001	4847	712	201	~~9780~~ 3783	5952	1067	39
20286	"	1.55	2.43	5.14	5.13	22.8	2845	8002	4594	740	169	3866	6162	1074	37
20287	"	2 48	3.42	4.49	4.50	15.8	3218	8001	4416	837	132	4164	5886	990	29
20288	"	3.42	4.44	3.96	3.97	13.1	3679	8002	4111	957	125	4592	5562	1004	38
20289	"	4.45	5.19	3.48	3.50	10.9	1990	3878	1835	518	56	2321	2605	440	17
20290	"	7.11	7.13	6.12	5.80	10.0	43	191	104	11.2	2.5	139	85	15	2
20291	"														
20292	"	958	1024	5,71	5,49	15,0	1507	4196	2410	392	59	2252	3218	568	21
20293	"	10:25	11:15	5.17	5.14	18.6	3002	8002	4462	781	144	4156	5795	1142	32
20294	"	11:15	12:17	4.46	4.56	14.3	3097	8001	4540	806	115	4539	5383	1098	17
20295	"	12:17	13:24	3.85	3.99			8001	?						
20296	"	13:25	13:38	3.35	3.50	10.4	151	370	185	39	4	205	209	45	1
20297	18/4/85	17 40	17 55	5.59	5.76	27.8	582	1829	~~1675~~	151	42	759	1374	218	4
20298	"	17 55	18 13	5,60	5,56	33.7	1068	3347	1916	278	94	1289	2724	357	17
20299	"	18 14	18 55	5,98	5,30	29.5	2207	6095	3588	575	34	2747	4728	705	32
20300	"	18 59	19 45	4,66	4,74	20,4	2681	8001	4241	698	142	3571	6606	886	25
20301	"	19 46	20 38	4,10	4,26	18.7	3123	8001	3885	813	152	3756	6494	916	23

RUN	Processors ON/OFF N50	MIP	TOF	FAMP	$\langle L \rangle$ 10^{30} cm^{-2}s^{-1}	Bhabha $\int Ldt$ nb^{-1}	$\int Ldt$ Exp. energy	IBM/Tape output	At Run Start ID (µA)	TOF (V)	ONLINE REJ SUM MIPROC T_2 %	NORD-50 T_1 & T_2 %	Σ Bhabha	MH	E_{beam}	Mag. Field −1× gauss	Remarks
20267	ON	ON	ON	OFF	1,98	4.06	514.89	IBM	1.0	0.7	46	50	46	0	21.800	4063	
20268	"	"	"	"	1,64	8,57	523.46	"	0,9	0,6	49	54	97	0	21.800	4066	
20269	"	"	"	"	1,69	0.09	523.55	"	0,7	0,5	41	55	1	0	"	4064	beams dumped.
20270	"	"	"	"				"	1,4	1,4							beam lost.
20271								"	~~1.5~~	~~1.3~~							
20272	ON	ON	ON	OFF	2.49	8.75	532.30	IBM	1,5	1,3	39%	39%	99	4	21.800	4064	
20273	"	"	"	"	1.54	3.89	536.19	"	~~1.50~~	~~1.2~~	42	44	44	2	"	4061	
20274	–	–	"	"	1.94	5.65	541.84	"	0,90	1.1	45%	45	64	0	"	4063	Stop datataking for magnet repair.
20275	"	"	"	"	3.71	9.84	551.68	"	1.8	2.5	42	41	101	5	"	-4847	magnet at 7500A again !
20276	"	"	"	"	2.86	8.29	559.97	"	1.5	1.2	42	46	78	3	"	-4850	
20277	"	"	"	"	2.41	7.80	566.77	"	1.2	0.8	44	48	71	3	"	-4850	
20278	"	"	"	"	2.03	7.62	574.39	"	1.1	.63	47	53	90	1	"	-4850	
20279	"	"	"	"	1.87	0.83	575.22	"	1.1	.56	45	55	6	0	"	-4850	
20281	"	"	"	"	2.93	9.36	584.58	"	1.6	1.4	42	42	106	1	"	-4850	Vert chamber reduced Voltage
20282	"	"	"	"	2.51	7.71	592.29	"	1.4	0.9	44	48	95	1	"	-4850	
20283	"	"	"	"	2.14	7.57	599.86	"	1.2	0.8	47	52	78	2	"	-4850	
20284	"	"	"	"	1.81	3.91	603.77	"			48	54	48	0	"	-4850	
20285	"	"	"	"	3.57	9.77	613.54	"	1.6	1.4	42	42	124	3	"	-4850	
20286	"	"	"	"	2.88	8.66	622,20	"	1.4	1.1	44	45	98	5	"	-4850	
20287	"	"	"	"	2.51	7.51	624,71	–	1.2	1.0	46	48	85	2	"	-4850	VTX = 1475V
20288	"	–	–	"	1.99	6.89	636.60	"	1.0	0 8	49	51	78	1	–	~	
20289	"	–	–	–	1.69	1.77	638,37	–	1.0	1.0	50	55	20	0	–	–	dumps
20290	"	"	"	"	4.53	0.19	638.56	"	1.4	1,3	10	50	3	0	"	"	VTX = 1450V Beams lost
20291								"	1,4	1,3							Forgot, no data
20292	"	"	"	"	3,63	5,48	644.04	"	"	"	44	44	62	2			No vertex-chamber.
20293	"	"	"	"	2.96	9.36	654.40	"	1,3	1,0	46	47	106	3	"	-4842	VTXC anode again 1475V
20294	"	"	"	"	2.36	8.50	662.70	"			47	46	94	0			V
20295	"	"	"	"		~7 ?	~670.0	"	1,0	0.62					"	-4844	Run summary lost!
20296	"	"	"	"	1,69	0,35	670,35	"	0,9	0,5	40	54	4	0	"	"	beams lost
20297	"	"	"	"	3,52	1,68	672 03	"	1.8	1.5	37%	39	19	1	"	"	
20298	"	"	"	"	3,09	3,36	675,37	"	1,6	1,3	"	46	38	1	"	"	New TIP trigger in / test (ok) (partly without N50 rejection)
20299	"	"	"	"	2,60	4,95	680,34	"	1,5	1,1	43	44	56	4	"	"	without New TIP.
20300	"	"	"	"	2,24	5,57	685,91	"	1,3	0,9	44	50	63	2	"	"	New TIP in
20301	"	"	"	"	1.90	5.92	691.83	"	1,1	0.7			65	2	"	"	

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 $E_{LG} \geq 6$ GeV	T_2 BIT 17 2T · E_4 · ⇉2TR

18/4/85

0:00 W. Bartl & D. Clarke

1:00 Run 20285 with 1450 V ~ 80 μA
1:15 BP-ch trip + ID-trip slow
1:40 gas check done ok
2.06 JOBS Error 45 – MP-16 analysis incomplete YY=1
2.45 Run 20287 BP-ch to 1475 V I = 70 μA
3:40 Run 20287 Std. histograms checked + printed. They are ok
5:20 For next fill decrease VTX-chamber HV to 1450

8:00 H Mills + J Olsson on shift

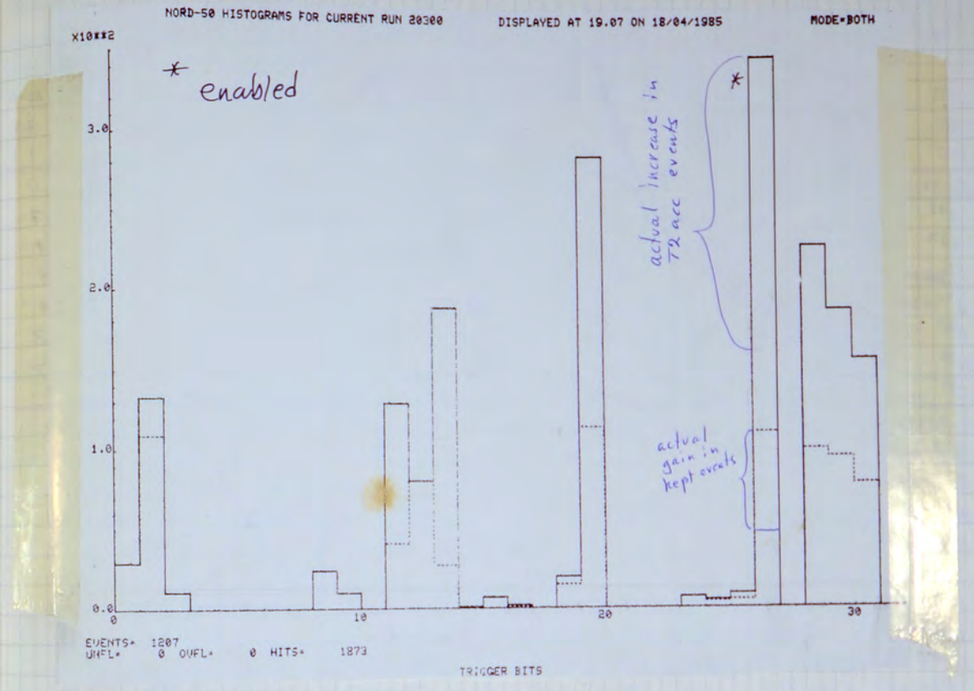
Beams at 955. Vertexch 1:5 offline, apparently closed powersupply. We start data taking without vertexch., try to reach responsible people. power pack exchanged (HV)

11:10 ID trip (chain current) and Z-chamber trip. Reset ID but not Z- called expert
By the time I arrived there Liesberg had successfully reset the zchamber, so it is not clear what happened the first time. Maybe the ID fast trip signal was still there. SLC
Tape Unit is now defect, can not be put in LOAD ! Wait until second Nord available, which will be next week. Leave power on!

Event-display and other programs updated to cater for "J.0.2" trigger.

16:01 Bowdery & Haidt on shift
17:20 Ready for run 20297
17:54 J Olson is installing his trigger
19:00 New Tlp trigger installed, from R20300 onw. There was in this fill a rather high deadtime at beginning (6×6 mA), and the addition of the new Tlp (Bit 11) increased this by a few%. The main cause of deadtime seems to be the other tracktriggers (Bit 13-15, 4). Note that the vetoes on these are increased (released), since a couple of days.
The New Trigger can be switched off with SET-TRIG, T1POS = 71615B T2Coinc = 503778
Note: On Run Summary appears the actually enabled trigger bits, and this info is kept in each event as well. In the event display, T2 coincidense pattern is printed out. Bit 9 is the new trigger i.e. 400 at end means New Tlp is only cause of T2 ACC.
IF not clear, read suppl. 5 of JADE mk 32 !

Processors ON/OFF N50	MIP	TOF	FAMP	<L> 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 MIPROC T_2 %	ONLINE REJ NORD SQ T_1 & T_2 %	Σ_{Bhabha}	MH	E_{beam}	Mag. Field −1 gauss	Remarks



19-4-85

00^{01} R. Bartl, R. Fest in shift
00^{30} Illegal JETC message and YSPX complains about missing DL8, wire number ~280. -34
Cures itself spontaneously.
1^{20} we get always after a run start CAMAC-error during magnet reading
MUX channel not set – but magnet currents on DVM are o.k.
1^{40} illegal JET chamber data, DL8-34 shows again no counts, stop run, clean counters
run summary shows many illegal bit counts (as run before)
1^{50} gaps in bit maps while time 33,34 – but no illegal bit count messages
2^{00} calc Expert E. Elsen – but don't succeed to wake him up
2^{10} wires start to count again – magic!
7^{50} VTX-chamber hard trip IBM-error 54 shows up (ignore it)

RUN | DATE | START | STOP | AT RUN START I^+ 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 $2T \cdot E_4 \geq 2TR$
Processors ON/OFF N50 MIP TOF FAMP | ⟨L⟩ 10^{30} cm^{-2}s^{-1} | Bhabha ∫Ldt nb^{-1} | ∫Ldt exp. energy | IBM/Tape OUTPUT | At Run Start ID (µA) TOF (V) | ONLINE REJ SUM MIPROC T_2 % NORD 50 T_1 & T_2 % | Σ_{Bhabha} | MH | E_{beam} | Mag. Field | Remarks

RUN	DATE	START	STOP	AT RUN START I^+	AT RUN START I^-	DEAD TIME (%)	TIME (sec)	RECORDS IN	RECORDS OUT	ALL $\times 10^6$	TO REJ $\times 10^6$	T_1 ACC SUM	T_2 ACC SUM	T_1 BIT 2 $E_{LG} > 6$ GEV	T_2 BIT 17 $2T \cdot E_4 \geq 2TR$
20 302	18/4/85	20^{39}	21^{34}	3.63	3.81	12.9	3289	8002	3845	857	111	3481	6262	521	26
20 303	"	21^{35}	21^{50}	3.24	3.42	12.3	860	1996	920	224	27	819	1527	195	7
20 304	"	21^{55}	21^{57}	3.12	3.30	11.8	83	247	110	22	3	78	154	21	2
20 305	"	22:53	22:57	5.93	6.26	43.8	176	527	289	45.8	20.0	153	411	42	0
20306	19/4/85	0^{22}	1^{13}	6.15	5.14	23.5	2525	8001	4341	656	154	3012	6181	743	27
20307	"	1^{13}	1^{37}	5.31	4.51	22.1	1430	4623	2598	371	82	1785	3508	419	18
20308	"	1:48	2:36	4.88	4.15	18.7	2810	8001	3935	731	137	3536	6508	839	29
20309	"	2^{36}	3^{28}	4.41	3.36	15.8	3131	8001	3750	814	128	3762	6430	868	20
20310	"	3:29	4^{25}	3.97	3.35	13.6	3379	8002	3497	879	119	4017	6317	854	23
20311	"	4^{25}	4^{43}	3.59	3.01	12.0	1032	2389	1082	268	32	~~302~~ 1246	1783	263	7
20312	"	5^{48}	5^{51}	5.82	5.83	20.2	187	585	297	49	~~20~~ 10	223	438	48	1
20313	"	7:04	8:02	5.98	5.52	23.8	2624	8002	4148	684	163	3198	6390	803	19
20314	"	8^{02}	9^{08}	4.96	4.78	21.6	2885	8002	4000	751	162	3503	6512	816	31
20315	"	9^{08}	10^{00}	4.11	4.15	15.5	3078	8002	3751	801	124	3731	6325	839	26
20316	"	10^{00}	10^{55}	3.62	3.56	12.9	3267	7931	3503	851	110	3960	6056	849	10
20317	"	13^{21}	14^{15}	4.70	4.80	14.5	3162	8002	3686	824	119	3673	6351	773	25
20318	"	14^{15}	15^{12}	3.87	4.29	13.6	3282	8002	3662	855	116	3870	6291	845	22
20319	"	15^{12}	16^{10}	3.35	3.84	13.3	3233	8001	3619	842	112	4002	6113	845	20
20320	"	16^{10}	16^{36}	2.83	3.31	12.7	1487	3582	1555	387	49	1809	2740	335	6
20321	"	18^{24}	18^{30}	5.73	6.19	51.1	266	716	437	69	35	279	663	74	4
20322	"	18^{30}	18^{33}	5.59	6.10	44.2	160	539	323	42	18	205	409	46	1
20323	"	18^{40}	19^{21}	5.50	5.96	49.8	1600	4318	2611	417	207	1588	3789	435	11
20324	} junk														
20325															
20326															
20 327	20.4.85	6:44	7:26	4.57	5.01	20.4	1401	4119	2059	364	74	1770	3166	432	15
20328	"	8:22	8:29	5.39	5.70	40.8	256	838	416	66	27	312	611	69	2
20329	"	9:09	9:51	5.76	5.46	38.0	1189	3843	2089	310	117	1475	2900	374	17
20 330	"	11:15	11:19	4.54	5.74	21.4	247	844	437	64	13	377	571	50	3
20 331	"	11:27	12:06	4.38	5.59	19.8	1698	6101	3914	441	87	2446	4000	459	14
20 332	"	12:28	13:20	3.47	4.94	17.7	2646	7727	3565	688	121	3418	5639	662	25
20 333	"	13:33	13:48	3.03	4.39	16.0	601	1722	711	156	25	~~144~~ 721	1269	144	49
20 334	"	15:56	16:48	5.83	5.08	38.8	2600	8002	4266	676	262	2808	6325	638	30

RUN	PROCESSORS ON/OFF N50	MIP	TOF	FAMP	⟨L⟩ 10^{30} cm^{-2}s^{-1}	Bhabha ∫Ldt nb^{-1}	∫Ldt EXPERIM.	IBM/TAPE OUTPUT	AT RUN START ID µA	TOF V	ONLINE REJ SUM MIPROC T_1 %	NORD-50 T_1 & T_2 %	Σ_{BHA}	MH	E_{BEAM}	MAG FIELD	REMARKS
20 302	ON	ON	ON	OFF	1.57	5.16	696.99	IBM	1.0	0.6	44	54	67	2	21.800		
20 303	"	"	"	"	1.38	1.19	698.18	"	"	"	45	57	12	0	"		
20 304	"	"	"	"	1.34	0.11	698.29	"	"	"	35	61	1	0	"		beams dumped
20 305	"	"	"	"	0.29	0.09	698.38	"	2.0	2.0	31	50	1	0	"	-4842	klystron failed, beams had to be dumped
20306	"	"	"	"	2.79	7.07	705.45	"	1.6	1.3	33	49	80	2	"	"	
20307	"	"	"	"	2.48	3.54	708.99	"	1.5	1.0	32	46	37	0	"	"	
20308	"	"	"	"	1.99	5.12	714.11	"	1.4	0.8	41	54	58	1	"	-4844	
20309	"	"	"	"	1.69	5.30	719.41	"	1.3	0.8	43	56	48	1	"	-4842	
20310	"	"	"	"	1.36	4.59	724.00	"	1.1	0.7	45	59	52	0	"	"	
20311	"	"	"	"	1.19	1.50	725.50	"	1.0	0.6	44	57	17	0	"	"	Beams Dumped.
20312	"	"	"	"	3.15	0.53	726.03	"	1.7	1.3	35	53	6	0	"	"	Beams Lost.
20313	"	"	"	OFF	2.48	6.51	732.54	"	1.6	1.3	38	51	72	1	"	-4841	
20314	"	"	"	OFF	1.91	5.51	738.05	"	1.5	1.0	41	53	69	1	"	-4841	
20315	"	"	"	"	1.63	5.02	743.07	"	1.2	0.7	43	56	60	1	"	-4843	
20316	"	"	"	"	1.59	4.86	747.93	"	1.2	0.7	43	58	55	0	"	-4841	beams lost just before they were to be dumped!
20317	"	"	"	OFF	2.44	7.70	755.63	"	1.3	0.9	41	57	79	5	"	-4846	
20318	"	"	"	"	1.87	6.14	761.77	"	1.2	0.8	43	57	60	3	"	-4847	
20319	"	"	"	"	1.37	4.51	766.28	"	1.1	0.6	43	57	51	0	"	-4849	
20320	"	"	"	"	1.15	1.68	767.96	"	1.1	0.6	44	60	19	1	"	-4850	beams dumped
20321	"	"	"	ON	1.99	0.71	768.67	"	1.4	1.5	38	43	8	0	"	-4850	
20322	"	"	"	OFF	2.29	0.35	769.02	"			35	44	4	0	"	-4848	
20323	"	"	"	ON	1.75	2.79	771.81	"	1.4	1.4	40	43	33	0	"	-4850	beams lost
20324																	
20325																	
20326																	
20 327	"	"	"	OFF	2.34	3.00	774.81	"			38	53	34	1	21.800	-4852	beams lost
20328	"	"	"	"	2.16	0.62	775.43	"	?	1.6	31	53	7	0	"	-4852	beams partially lost (1404 V)
20329	"	"	"	"	2.06	2.92	778.35	"	1.7	1.5	33	48	33	1	"	-4592	VTX chamber 1450 V
20 330	"	"	"	"	2.46	0.27	778.62	"	1.7	1.0	33	51	3	0	"	-4620	— " —
20 331	"	"	"	"	2.32	~~2.34~~ 5.04	783.66	"	1.7	1.0	20	37	57	1	"	-4623	— " —
20 332	"	"	"	"	1.46	3.71	787.37	"	1.5	0.7	35	57	42	1	"	-4623	— " —
20 333	"	"	"	"	1.10	0.44	787.81	"	?	?	33	62	5	0	"	I=7530	beams dumped
20 334	"	"	"	"	1.88	4.68	792.49	"	1.8	1.4	33	50	53	3	"	-4837	

RUN	DATE	START	STOP	AT RUN START I^+	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 Bit2 $E_{LG} \geq 6GeV$	T_2 BIT17 2T·E_4·≥2TR

8⁰⁰ Clwin, Bethke on shift.
vxch - trip.
8⁰⁶ two times "no events" with no obvious reason. Pause / Cont. helped.
8⁰⁸ vxch hard trip. (α2)
8¹⁰ " " " "
8²² vxch soft trip.
8³⁰ " " " 9⁰⁰ another soft one.
9²⁵ Frequent JDAS error 46 - MP16 out of sequence ; YY = 1.
Occasional " " 45 - " analysis incomplete ; YY = 1
10²⁵ Throughout this shift - numerous Magnet ~~Read~~ Read Error occurrences.
10⁴⁵ Missing LAM branch 4 crate 6 : I.D. Ring 2 (→ & not for the first time!).

11⁴⁵ Short Break → PKR say they have "water losses"! (?)
13⁰⁰ Found faulty DL8 (Seg 18, cell 3, 1. DL8 wire # 1312 - 1319), timing-bit 64 missing.
This error is probably present since 10.4.84 ~20⁰⁰ (time, this DL8 has been installed). Sorry, but
this error is not easy to see! S.B.
Now ~~error~~ faulty DL8 has been exchange, error is gone.
15:51 vxch soft trip

16⁰⁰ Kawagoe and Laurikainen on shift

16¹⁰ DESY has now a problem. The beams will be dumped at ~~4~~ 16³⁰. (phone from TASSO)
"LG barrel HITS > 250" appears rather often.
16³⁵ I.D. & Vxch tripped. then beams dumped.
FAMP ON (with old Lorentz angle (CATHODE?) 17°)
~~DELTA~~ Dead time is about 50 %. Vx Ch tripped many times
19⁰⁰ Missing LAM br. 2 cr. 3 TOF1

20/04/85
0:00 Kohlen and Hellenbrand on shift
1:00 cavity - Störung, Wiederanlauf 6:00 Uhr
magnet to 500 Amps
magnet sleepwalked to 7300 Amps, always when it was reseted, it walked to
7300 Amps again. So we left it at 7300 Amps
5:30 New filling ready, magnet to 7500 Amps

Processors ON/OFF N50	MIP	TOF	FAMP	<L> $10^{30} cm^{-2} s^{-1}$	Bhabha $\int Ldt$ nb^{-1}	$\int Ldt$ Exp. energy	IBM Tape OUTPUT	At Run Start ID (μA)	TOF (V)	ONLINE REJ SUB MIPROC T_2 %	NORD 50 T_1 & T_2 %	Σ Bhabha	MH	E_{beam}	Mag. Field -10 gauss	Remarks

5:40 tried to start RUN
this and the next ones stopped after 5 or 6 TRIGGER
with NO TRIGGERS FOR ... SECONDS
NORD Reloaded, then it worked
5:40 to 6:30 ~ 10 VTX chamber trips
6:40 YMAGNE complains of wrong magnetic field, -4851, while nominal is -4150. ← 08:10 We reset nominal value in N10 (CB)
We think -4851 is correct.
7:15 numerous vertex chamber trips. During running Anode Peak Current is constantly above 60 μA

8:00 Bowdery & Magnussen on shift

8:05 We get immediate HT problems with the vertex chamber. We temporarily alter the peak voltage to <u>1404v</u>
in order to start a run.
8:30 Fill partially lost. Beams will be dumped.
9:15 Vertex chamber HT set to <u>1450v</u> on advice of duty expert (Kleinwort)

→ Magnet CAMAC error now occurs frequently (MUX channel not set)

9:22 TASSO call. PKR wants a 30 min. break at 9:30 to repair SC cavity.
11:49 Continuous "ILLEGAL JETC DATA" message on colour TV. (Apparently 10 illegal hits)

IMPORTANT NOTE
From Run 20329 to Run 20333, the magnetic field recorded on the run sheets
appears to be too low. This will probably mean fixing the magnetic field later in the HEAD banks.
The magnet current is about 7520A. The recorded field varies between -4500G and -4700G. ?
(Are you sure the current did not change? If the measurement was incorrect there should have been many "Fluctuation" messages.) E.F.

→ 13:30 Matsumura exchanges a DL8 to solve JETC problem. 24 wires affected ~~from~~ for run <u>20331</u> and <u>20332</u>
14:15 Tested JCC10 in serial crate 4, found OK. Pulled out (after stopping NORD, RTX) the Borer
Multiplexer and all front cables, rubbed off highway contacts, in again. Seems now OK... J.O.

16:00 Becker, Matsumura on shift
16.15 Gas check
16.16 VTX chamber trip
16.32 " " "
18.00 " " "
18:20 " " "

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 $E_{LE} > 6$ GeV	T_2 BIT 17 2T. $E_4 \cdot \rightarrow 2TR$
20335	20.4.85	16:48	17:05	5.17	4.52	30.1	2597	8001	3797	676	203	2882	6171	694	26
20336	"	17:46	18:37	4.60	4.01	22.0	2731	8002	3576	716	156	2987	6121	672	22
20337	"	18:38	19:28	4.12	3.61	16.0	2977	8002	3459	775	124	3455	6087	737	20
20338	"	19:28	20:23	3.76	3.28	14.0	3272	8001	3362	851	119	3656	6112	744	22
20339	"	20:23	20:27	3.62	2.98	13.5	200	548	201	52	7	223	375	39	1
20340	"	21:54	22:43	6.05	5.33	27.1	2587	8001	3854	676	183	2814	6153	676	18
20341	"	22:43	23:32	5.09	4.71	27.0	2594	8002	3786	675	183	2999	6092	687	28
20342	"	23:34	0:24	4.34	4.19	15.7	2998	8001	3732	781	123	3567	6298	800	26
20343	21.4.85	0^{27}	1^{23}	3.71	3.74	13.6	3332	8002	3479	867	118	3925	6187	786	23
20344	"	1^{23}	2^{14}	3.31	3.37	12.1	3010	6753	2728	783	95	3397	5213	635	19
20345-2349	TESTS														
20350	"	7^{09}	7^{29}	2.85	3.67	10.8	89	248	119	23	3	110	155	21	2
20351	"	7:44	9^{09}	5.81	6.07	33.3	2580	8001	3899	672	224	2821	6141	721	25
20352	"	9^{09}	9:56	4.27	4.95	24.1	2603	8001	3748	678	163	3024	6142	705	20
20353	"	9:59	10:34	3.83	4.50	20.2	2075	6221	2682	540	109	2469	4597	560	16
20354	"	12:09	13:10	5.96	5.19	22.8	2438	8002	4217	634	144	2942	5743	623	28
20355	"	13:11	14:01	5.29	4.63	26.9	2603	8002	3779	677	182	2960	6065	741	26
20356	"	14:01	15:02	4.76	4.16	24.6	2580	8001	3620	671	165	2893	5821	655	23
20357	"	15:03	15:49	4.22	3.67	19.4	2709	8002	3500	705	137	3149	5731	644	14
20358	"	15:49	16:36	3.87	3.36	17.0	2806	8002	3423	730	123	2936	5646	663	17
20359	"	16:36	17:18	3.56	3.08	15.5	2497	6422	2628	650	100	2805	4674	541	13
20360	22.4.85	TESTS													
20361	"			5.82	5.80				309						
20362	"	12:17	13:12	5.68	5.50	34.7	2557	8001	4481	665	231	3030	6693	788	27
20363	"	13:12	14:06	4.87	4.85	27.0	2653	8002	4254	680	187	3125	6676	791	30
20364	"	14:06	14:20	4.34	4.33	18.0	648	1863	929	138	30	785	1463	183	3
20365	"	15:38	16:11	5.52	4.92	27.5	1055	3310	1825	274	75	1320	2822	354	10
20366	"	17:29	18:24	5.58	5.50	19.7	2730	8002	4270	710	139	3534	6493	843	33
20367	"	18:28	19:31	4.80	4.74	17.4	2932	8002	4208	763	132	3667	6779	874	28
20368	"	19:31	20:38	4.17	4.12	13.9	1702	4182	2005	442	61	2092	3463	447	14
20369	"	20:47	21:19	3.60	3.56	9.2	1918	4258	1915	499	45	2364	3598	461	8
20370	"	22:18	23:01	4.66	5.11	14.7	1384	3620	1774	360	53	1654	2889	360	12
20371	23/4/85	01:01	2:02	5.32	5.38	19.5	2776	8002	4068	722	141	3274	6422	778	20
20372	"	2:02	2:08	4.68	4.40	23.2	61	250	116	16	4	91	142	17	2

RUN	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 MIPROC T_2 %	ONLINE REJ NORD 50 T_1 & T_2 %	Σ_{Bhabha}	MH	E_{beam}	Mag. Field +/- Gauss	Remarks
20335	ON	ON	ON	OFF	1.43	3.62	796 ~~802~~ .11	IBM	2.0	0.8	32	56	41	2	21800	-4840	
20336	"	"	"	"	1.32	4.33	800.44	"	2.0	0.8	31	58	49	2	"	-4838	
20337	"	"	"	"	1.41	4.33	804.77	"	1.6	0.9	28	60	49	0	"	-4838	
20338	"	"	"	"	1.15	3.53	808.30	"	1.5	0.6	38	61	40	2	"	-4838	
20339	"	"	"	"	0.93	0.27	808.57	"	1.4	0.6	39	65	3	0	"	-4837	beam lost
20340	"	"	"	"	2.48	5.57	814.14	"	1.7	1.3	27	55	63	3	"	-4838	
20341	"	"	"	"	1.98	5.48	819.62	"	2.0	1.1	33	56	62	1	"	-4838	
20342	"	"	"	"	1.88	6.45	826.17	"	1.5	0.8	39	56	73	0	"	-4838	Cmiatake.
20343	"	"	"	"	1.35	4.77	830.94	"	1.3	0.6	42	59	54	1	"	-4838	
20344	"	"	"	"	1.20	3.80	834.74	"			43	62	43	1	"	-4836	
20345-2349																	
20350	"	"	"	"	1.36	0.18	834.92	"			31	57	2	0	"	-4837	SYSTEM CRASH NORD TROUBLES.
20351	"	"	"	"	2.07	5.65	840.57	"	2.2	1.4	31	54	64	0	"	-4836	BEAMS DUMPED.
20352	"	"	"	"	1.77	4.60	845.10	"	1.9	0.85	32	56	52	0	"	-4837	
20353	"	"	"	"	1.57	3.45	848.55	"	1.9	0.75	31	60	39	1	"	-4837	beam lost
20354	"	"	"	"	2.59	5.12	853.67	"	1.8	1.2	28	50	58	1	"	-4840	
20355	"	"	"	"	2.02	4.86	858.53	"	~~2.2~~	~~0.9~~	32	56	55	1	"	-4838	Voltline
20356	"	"	"	"	1.71	3.89	862.42	"	2.2	0.9	30	58	44	1	"	-4840	VTX, ID - current remains high
20357	"	"	"	"	1.51	4.06	866.48	"	2.1	0.8	30	59	46	1	"	-4840	
20358	"	"	"	"	1.29	3.63	870.11	"	2.0	0.7	31	61	40	3	"		
20359	"	"	"	"	1.21	3.00	873.11	"	2.0	0.6	34	62	34	1	"	-4841	beams lost before dumping time
20360					0.14	0.09			~~1.7~~	~~1.4~~							VTXC back to 1475V
20361									1.7	1.4							Nord crash.
20362	"	"	"	"	2.35	6.27	873.38	"	1.7	1.3	40	46	71	1	"	-4844	
20363	"	"	"	"	2.11	6.10	885.48	"	1.6	1.2	38	50	63	2	"	-4844	
20364	"	"	"	"	2.30	1.77	887.25	"	1.5	0.8	39	54	20	3	"	-4844	beams lost.
20365	"	"	"	"	2.94	3.00	890.25	"	1.5	1.0	40	48	34	1	"	-4844	1 beam lost
20366	"	"	"	"	3.43	7.86	898.11	"	1.3	1.3	42	50	89	5	"	-4844	
20367	"	"	"	"	2.62	7.42	905.53	"	1.1	0.9	45	50	84	3	"	-4844	
20368	"	"	"	"	1.93	3.36	908.89	"	0.8	0.8	49	55	38	1	"	-4844	run stopped by shift crew
20369	"	"	"	"	1.61	2.56	911.45	"	0.8	0.7	51	56	29	1	"	-4842	no VTXC this run
20370	"	"	"	"	2.73	3.89	915.34	"	1.3	0.9	43	54	44	0	"	-4841	beams lost
20371	"	"	"	"	2.14	6.27	921.61	"	14	1.8	39	52	71	0	27802	-4840	
20372	"	"	"	"	2.74	0.78	921.79	"	16	1.7	75	58	2	0	27800	-4841	beams dumped

RUN	DATE	START	STOP	AT RUN START I⁺	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 $E_{LG} \geq 6$ GeV	T_2 BIT 17 2T· E_4 · ≥2TR

Processors ON/OFF N50	MIP	TOF	FAMP	⟨L⟩	Bhabha ∫Ldt	∫Ldt exp, energy	IBM/Tape OUTPUT	At Run Start ID (μA)	TOF (V)	ONLINE REJ MIPROC T_2 %	NORD 50 T_1 & T_2 %	Σ Bhabha	MH	E_{beam}	Mag. Field	Remarks

18^{43} JDAS readout err. 45 / 33
19^{20} " " " 45
22^{24} VTX Trip
22^{34} JDAS readout err. 46
23^{17} VTX Trip

21/04/85

0^{00} Kawagoe and Middleton on shift.

1^{39} JDAS READOUT ERROR 46 – MP-16 out of sequence YY=1.

2^{10} "No events for nn seconds" – try Pause/continue many times & then try a new run which stops ~~itself~~ immediately without taking data. Various messages on system console... eventually phone Jan Olsson... he comes in.

07^{00} Changed executive controller in System Crate, cured Camac Errors. In course of investigation, also Camac and Padac Interface cards (identical) were interchanged. As consequence, it was not possible to write to IBM. Changing interfaces back, Colourtv scrambled (Padac). Replaced the PADAC interface cards with the Camac Interface from second Nord. Successfully wrote events to IBM just before beams dumped... J.O. (For the next 5-6 hours, call Rehlich at home if things still don't work) (Rebuilt system as well) TEL 388690.

DO NOT DISTURB JAN OLSSON UNTIL AFTER LUNCH TODAY.

07^{10} nominal field reset in JDAS after the above J
beams dumped.
07^{40} New fill ready — back in business!
7^{43} VTX chamber trip – reset.

8:00 Bethke, Kleinwort on shift
... start with a vxch soft trip. Kleinwort starts jogging.
(Softtrip in Q4, anode voltage 1450 V, Q4: 27 μA Q2: 13 μA)
8:21 vxch trips so often that no datataking is possible. always Q4!.
Also 1 ID soft trip
8:40 VXTC, ID hard trip
8:55 Missing Lam Br 2 Cr 6 : Leadglass ADC's
9:40 VTXC soft trip
9:54 Run stopped (8000 evts), Colour TV says "Run summary printing", but nothing happens on Gould-platter. Print by hand. → Gould platter no reaction on "copy"-request. So we print on System console
10:34 beams lost, Run stopped, several POWER ON/OFF / LOC/REM at Gould → Gould works again

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11:00 exchanged faulty DL8 #31 (R1, cell 16, 2. DL8), had always amplitudes $A^+ = A^- = 1025$.
This DL8 was ~~exch~~ installed Saturday 13:30 (see note page 89). Since that time there is a big peak in the A^+A^--histogram for this DL8 (factor 2 higher!). Why did nobody recognize it? It's also present in the filed std. histograms.

- 15:00 several VTXC-softtrips due to bad beam-conditions. Thresholds for softtrips changed C.K.

16^{00} Bowdery & Haidt on shift

17:11 Second trigger box hang-up this shift. PAUSE and CONTINUE cures it.
23:43 No beam since 17:20 because of transmitter problems and now computer trouble.

22.4. Dieckmann, Schneekloth
0^{20} gas check done

8^{00} Middleton, Schmidt on shift

8^{02} Gas check done VTXC anode Voltage back to 1475 V (HK)
runs 20360/1 were tests.
12^{0} new fill ready – back in business!
12^{10} Nord crash – re load.

12^{15} .

12^{20} JETC V43 S FOR THESE DC 85 GIVE NO RESPONSE ! 135
12^{30} first trip of Vertex chamber
12^{44} JDAS readout error 33 obtaining CAM branch 2 crate 3 : TOF 1 counters
12^{50} " " " 33 " " " 4 : TOF 2 counters.
12^{50} Run 20362 : Start to event ~3200 V34 of cell 10.4 (wires # 1072-1087) inactive (-6V fuse)
13^{35} soft ID + Vertex chamber trip
13^{40} JDAS readout error 33 obtaining CAM branch 3 crate 4 : Z-Chamber part 1
" " " 33 " " " 2 " 3 TOF 1 counters
" " " 33 " " " 2 " 3 " "
14^{20} beams lost.
15^{00} hard trip on VTX-chamber, ID & Z-chamber – some e⁻ current lost.

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 $E_{LE} > 6$ GeV	T_2 BIT 17 2T. $E_+ \cdot \geq 2$TR

16:00 Hageman & Bowdery on shift

16:10 One beam lost – not an auspicious start!

16:20 Gas check done

17.45 VTXC Anode current signal connected to PKR

[We performed a short experiment to determine whether it is possible to interrupt an outgoing phone call to another experiment in order to receive an incoming call. It is! The original call can be continued by pressing the appropriate destination button.

20:30 Asking PKR for a beam optimisation
20:44 No improvement in background condition => VTXC hardtrip ready every minute
20:46 Run 20369 without VTXC
20:47 ID-Anode current signal reconnected to PKR

23/4/85

0:00 Kawagoe and Kado on shift

0:20 gas check done
0:45 new fill ready. VTXC anode current signal send to PKR. very good background conditions (VTXC ~ 23 nA)
1:10 "Background optimization" → background situation gets worse (VTXC ~ 26 nA and increasing)
1:14 VTXC hard trip (Q7)
1:20 " " " "
1:22 " " " "
1:27 " " " "
1:30 asking PKR what they are doing: "we optimize for TASSO!"
1:42 VTXC hard trip (Q7)
2:00 VTXC soft trip (Q4) (VTXC current ~28 nA now!)
2:05 " " " (Q3)
2:06 TASSO would like new beams – o.k. good luck next time.

Processors ON/OFF N50	MIP	TOF	FAMP	<L> 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 MIPROC T_2 %	ONLINE REJ NORD 50 T_1 & T_2 %	Σ_{Bhabha}	MH	E_{beam}	Mag. Field	Remarks

2:40 new beams ready, but high background. Unable to switch on the Vxtxchamber, it trips immediately after it reaches the ON-state. So HV-run-up stopped in between, to allow PKR to optimize on the anode current signal. → it works! suddenly the background goes down and we could reach the nominal anode voltage of 1475 V.
3:19 start RUN 20373 – still "Background Optimization", but beams seems to be stable
3:25 "Luminosity Run"
4:55 JOAS error 45 – MP 16 analysis incomplete; YY = *
5:50 NORD 50 crash → illegal instruction
RUN stopped, impossible to start a new one. NORD rebooted, then it worked — Did you try EXIT/RT ZDAS? this was not possible; after "F9" = Start Run the NORD was terrible busy but showed no reaction on any key hacked on the terminal Did any other terminal work? */ */ sorry, this was not tried, but it was obviously not a terminal problem.
YMAGNE always claims: "wrong field" nominal value – 4750 G.
magnet current is correct (7500 Amps) so I guess this value belongs to the old current setting of 6300 Amps.
→ nominal field set to 4840 G, Tolerance 100 G.
6:35 Trigger box or NORD? hang up – PAUSE/CONTINUE does not work → stop run
starting a new run does not work (tried three times: the run always ended after the first predicted event but no message "run terminated" etc.
EXIT and start ZDAS again
start run 20387 → all Micros are OFF !?? → stop run, switch Micros ON, start new run → o.k.
6:59 ID and VC soft trip ← first trip since 4 hours!
07:57 SWITCH OFF HV APPEARS — STOP RUN AND COMPLY WITH INSTRUCTION!

08:00 DAY SHIFT – HEDGECOCK & BETHKE!
08:10 W. BARTEL CALLS: RUN DOWN MAGNET AND SWITCH OFF.
16:00 J. Olsson and H. Rieseberg on shift
"RESTART CA. 17.00 UHR" on the TV screens (Today is a scheduled break for cabling work)
18:00 RESTART CA. 20.00 UHR Backup of system Disc made.
20:55 RESTART CA. 22.30 UHR; Problem is in the region of the Synchrotron
22:00 Injection! Magnet 0 → 7500 A

24/4/85

0:00 WARMING and MIDDLETON on graveyard shift. gas check ok
0:55 new fill ready.
1:05 stot run to clean contacts on DL 8-46. – ok new run.
3:40 total beam loss – hard VTX TID Monitor trip – remaining beam dumped.
– PETRA SHORT BREAK.
6:00 new fill ready.
6:44 beams lost superconducting cavity broke down and lost helium, estimated repair time 6–8 hours.

RUN | DATE | START | STOP | AT RUN START I+ I− | DEAD TIME (%) | TIME (sec) | RECORDS IN | RECORDS OUT | ALL ×10^6 | Tφ REJ ×10^6 | T1 ACC SUM | T2 ACC SUM | T1 Bit2 E_LG>6GeV | T2 BIT 17 2T·E4·≥2TR | Processors ON/OFF N50 MIP TOF FAMP | <L> | Bhabha ∫Ldt | ∫Ldt exp, energy | IBM/Tape OUTPUT | At Run Start ID (μA) TOF (V) | ONLINE REJ SUB MIPROC T2 % NORD 50 T1 & T2 % | Σ Bhabha | MH | E beam | Mag. Field | Remarks

RUN	DATE	START	STOP	At RUN START I^+	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 $2T \cdot E_4 \cdot \geq 2TR$
20373	23.04.85	3^19	4^04	5.16	5.88	29.1	2593	8001	4394	675	196	3085	6640	796	22
20374	"	4^04	4^50	~~4.11~~ 4.54	~~4.87~~ 5.31	23.5	2717	8002	4251	707	166	3294	6774	832	28
20375	"	4^50	5^39	4.11	4.86	17.2	2916	8002	3974	759	130	3487	6661	821	22
20376	"	5:39	5:55	3.75	4.46	15.6	928	2522	1162	241	38	1200	1990	274	3
20377	"	6:00	6.39	3.61	4.31	14.5	2321	5762	2719	604	88	2753	4665	618	11
20378...80	"	—	—	—	—	—	—	—	—	—	—	—	—	—	—
20381	"	6:44	6:48	3.36	4.02	25.4	215	745	378	56	14	259	397	48	4
20382	"	6:49	7:49	3.33	3.99	12.6	3457	8002	3616	897	113	3979	6398	814	31
20383	"	07^50	08^01	3.53	364	11.9	619	1440	613	142	19	782	1048	137	3
20384	24/4/85	1.02	1.11	5.32	5.83	22.0	296	974	647	77	17	365	608	68	5
20385	"	1.14	2.05	5.28	5.78	16.5	3077	8002	4126	800	132	3896	6331	903	22
20386	"	2:06	2:58	4.64	5.15	15.0	3141	8002	3903	817	123	3859	6454	797	23
20387	"	2.58	3.41	4.15	4.63	12.8	2538	5826	2702	660	84	2831	4903	558	14
20388	"	6:03	6:44	5.34	5.55	17.2	2184	6154	3102	568	98	2789	4836	615	19
20390	25/4/85	16:13	17:06	2.99	3.43	10.3	2378	4496	1756	619	63	2362	3618	351	13
20391	"	17:11	17:30	2.72	3.15	9.6	1023	1808	697	265	25	979	1465	135	4
20392	"	17:32	17:53	2.61	3.05	11.3	1129	1940	747	294	33	1076	1577	141	1
20393	"	21:01	21:20	4.38	4.25	13.6	935	2456	1009	243	33	1033	1849	194	10
20394	"	21:28	21:42	4.17	4.05	13.9	220	592	244	57	8	230	440	46	1
20395	"	22:02	23:06	3.91	3.80	11.1	3802	8002	3492	989	109	4031	6472	724	23
20396	"	23:07	0:12	~~3.84~~ 3.42	3.36	11.1	3884	8001	3369	1010	113	4093	6366	660	29
20397	26/4/85	0:13	1:20	3.10	3.00	12.9	3981	7664	3077	1036	134	4009	5950	613	16
20398	"	3:50	4:49	4.56	4.65	12.3	3537	8001	3561	921	114	3834	6417	737	42
20399	"	4:49	5:47	4.07	4.16	12.1	3468	8002	3499	902	109	3715	6429	684	28
20400	"	5:48	6:48	3.64	3.71	11.9	3603	8002	3308	937	111	3925	6271	749	19
20401	"	6:58	7:56	3.27	3.33	11.5	4016	8002	3084	1055	119	3906	6516	663	15
20402	"	7:59	9:05	2.91	2.97	11.4	3903	7575	2829	1015	116	3884	5999	617	11
20403–20405	junk, since the program doesn't allow to start a run without VTX-chamber, screen says "no Latch bank" no data read at all – bug in Read out program														
20406	"	12^28	12^35	4.93	5.01	29.5	382	1172	489	99	29	379	873	91	1
20407	"	12^37	13^17	4.91	4.99	16.3	2058	5236	2338	536	87	2254	4074	465	15
20408	"	13:25	14:25	4.45	4.52	12.9	3368	8002	3591	876	113	3845	6499	791	20
20409	"	14^36	15^39	4.00	4.07	11.7	3757	8002	3613	577	114	4220	6521	789	18
20410	"	15:36	16:03	3.56	3.62	12.1	1397	3069	1313	363	44	1625	2415	296	11

RUN	Processors N50	MIP	TOF	FAMP	$\langle L \rangle$ $\times 10^{30}$/cm²sec	$\int L dt$ 1/nb	$\int L dt$ Exp, energy	output IBM/Tape	At RUN START ID [μA]	TOF [V]	ONLINE REJ SUM MIPROC T_2 [%]	NORD 50 T_1 & T_2 [%]	Σ Bhabha	MH	E_{beam}	Mag. Field [gauss]	REMARKS
20373	ON	ON	ON	OFF	1.97	5.12	926.91	IBM	1.6	1.5	38	48	58	1	21.800	-4840	
20374	"	"	"	"	1.68	3.89	930.80	"	1.4	1.2	41	50	44	1	"	-4841	
20375	"	"	"	"	1.36	3.62	934.42	"	1.3	1.0	42	53	41	2	"	-4841	
20376	"	"	"	"	1.20	0.88	935.30	"	1.1	0.9	44	57	70	0	"	-4840	NORD 50 crash
20377	"	"	"	"	1.14	2.39	937.69	"	1.1	0.8	44	56	27	1	"	-4841	
20378...80	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	garbage – NORD problem –
20381	"	OFF	OFF	OFF	0.78	0.18	937.87	"	1.1	1.1	2	61	2	0	"	-4840	still NORD problem → Micros OFF
20382	"	ON	ON	OFF	0.93	3.09	940.96	"	1.0	1.1	46	57	35	1	"	-4841	
20383	"	"	"	off	1.18	0.62	941.58	"	0.9	0.6	39	61	7	0	"	-4840	BEAMS DUMPED.
20384	"	"	"	"	3.84	1.33	942.91	"	~~0.6~~ 1.2	0.8	16	35	15	0	"	-4853	stopped to clean the contacts.
20385	"	"	"	"	3.91	12.46	955.37	"	~~0.5~~ 1.1	0.8	44	51	141	2	"	-4853	
20386	"	"	"	"	2.98	8.75	964.12	"	~~0.5~~ 1.0	0.7	44	54	99	2	"	-4854	
20387	"	"	"	"	2.49	5.57	969.69	"	0.9	0.6	46	56	63	3	"	-4851	partial beam loss – [illegible] dumped
20388	"	"	"	"	4.48	8.83	978.52	"	1.2	1.0	41	52	100	2	"	-4853	beams lost
20390	"	"	"	"	1.36	2.83	981.35	"	~~0.6~~	~~0.3~~	48	64	32	1	"	-4847	
20391	"	"	"	"	1.17	0.71	982.06	"	0.6	0.3	50	64	8	0	"	-4846	~~[illegible]~~
20392	"	"	"	"	1.15	1.30	983.36	"	0.6	0.3	52	64	11	0	"	-4845	beams dumped
20393	"	"	"	ON	2.23	2.09	985.45	"	1.6	0.7	33	62	32	0	"	-4841	
20394	"	"	"	ON	2.57	0.57	986.02	"	1.8	0.6	32	62	4	0	"	-4840	
20395	"	"	"	"	2.08	8.31	994.33	"	1.0	0.5	47	59	94	1	"	-4840	
20396	"	"	"	OFF	1.66	5.57	999.90	"	1.0	0.45	47	61	63	1	"	-4838	
20397	"	"	"	"	1.29	5.12	1005.02	"	0.9	0.38	46	62	58	1	"	-4840	beams dumped.
20398	"	"	"	"	2.47	8.66	1013.68	"	1.3	0.65	43	58	98	2	"	-4841	
20399	"	"	"	"	2.40	8.39	1022.07	"	1.2	0.55	41	59	95	3	"	-4840	
20400	"	"	"	"	1.86	6.89	1028.96	"	1.2	0.5	44	61	78	1	"	-4841	
20401	"	"	"	"	1.39	5.12	1034.08	"	1.1	0.52	44	64	58	1	"	-4840	
20402	"	"	"	"	0.97	3.27	1037.35	"	0.9	0.40	45	65	37	2	"	-4830	beams dumped
20406	"	"	"	ON	2.48	1.15	1038.50	"	2.4	1.1	30	61	13	1	"	-4831	stopped for IBM [illegible]
20407	"	"	"	"	2.18	4.77	1043.27	"	2.4	1.1	37	58	54	0	"	-4841	
20408	"	"	"	OFF	1.66	5.83	1049.10	"	1.6	1.1	43	58	56	3	"	-4842	
20409	"	"	"	"	1.13	3.80	1052.90	"	0.8	0.6	49	57	43	2	21800	9890	
20410	"	"	"	ON	1.39	1.77	1054.67	"			48	60	20	0	"	-4842	run stopped for new TV program

RUN	DATE	START	STOP	AT RUN START I^+	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 > 2TR	Processors ON/OFF N50	MIP	TOF	FAMP	<L>	Bhabha $\int Ldt$ nb^{-1}	$\int Ldt$ exp, energy	IBM/Tape OUTPUT	At Run Start ID (μA)	TOF (V)	ONLINE REJ SUB MIPROC T_2 %	NORD 50 T_1 & T_2 %	Σ Bhabha	MH	E_{beam}	Mag. Field	Remarks

24/04/85

8^{00} Kawagoe and Knies on shift
" RESTART CA 15^{00} "
8^{10} Gas Check Done.
16^{00} No beams during day shift;

16^{00} Bartel and Bowdery on shift
'Restart ca 20^{00}'
18^{30} Gas checks done ok
20^{30} 'Restart ca 23^{00}'
23^{00} 'Restart ca 3^{00}' still problems with superconducting cavity
→ Please call Jan Olsson at 06:30 (Message to Eckhard Elsen from J.O.)

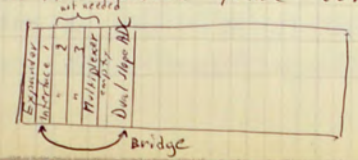
23^{00} Call E. Elsen: he should not come in before 3^{00}

25/04/85
~~0~~1:00 Laurikainen (and Elsen ↑) on shift
3^{00} No beam before 4^{00}. Laurikainen goes home.
~~4~~4^{00} 'Restart ca 5.30'
6^{20} "Restart not before 7^{00}"
8^{00} RAMCKE and MIDDLETON on shift.
9^{20} Magnet → 7500 A
9^{55} gas check done
10^{10} Magnet → 4000 A
11^{00} Magnet → 7500 A
1^{42} FAMP on (at Laurikainen's request). New constants (version PATHOBJ2) Slave 1 not analysing

---

16^{00} fill ready, new shift crew also: Dieckmann and Kuhlen
16^{20} Start: Run 20390 ← New VTXC-Gas
16.47 YSPY: TOF TDC no hits: 41 } low rate?
16.58 : 7 }
19.00 Improvement in Magnet read out: The multiplexer, which often gives missing Q-response, leading to error "Mux channel not set" on teletype, has been bridged. The multiplexer is not needed (originally intended for switching DVM between main and compensating magnets); it is at the same time commented out in program YMAGNET.
J.O.

cc 10 crate 4, rack 21:



(P.S. J learned this from E. Elsen, who designed it originally!)

Run 20394 taken with ~~ALL~~ (DIT) N50DAR (Testversion) Test for Histogram 10: it is empty!
22^{00} Vertexch. tripping and tripping, no datataking possible...
Installing the new automatic "readout without vxch if no vxch HT"; it works fine, we leave it in.
One still has to run of course, to run HV up ... good for the health ... but datataking continues!
BUT WHO'S HEALTH
J.O.

Next shifts watch out! → Alarm for VTX chamber trips not yet installed
Watch the VTX chamber current monitor.

26/4/85
0^{00} Kawagoe and Kleinwort on shift
0^{30} Gas check done
1^{25} For tests: new ZREAD, VTXC-Software installed C.K.
2^{45} No beam since 1^{20}, now short break: Water-leakage in Transportline DESY → PETRA
3^{45} new fill ready, nice background-conditions
4^{00} YSPY: TOF TDC no hits: 24, 83
4^{50} VTXC hard trip
4^{51} JDAS Error 74: wrong LAM Br 1 Cr 1: VTXC
4^{55} VTXC hard trip
5^{55} JDAS Error 46: M-16 out of sequence YY=1
6^{23} YSPY: TOF TDC no hits: 60
6^{38} YSPY: TOF TDC no hits: 80
7^{25} YSPY: Trigger 2 output missing: 149
7^{45} JDAS Error 33: Missing LAM Br 4 Cr 6 I, O, Reg 2
7^{55} Software-Tests finished, Software from before 1^{25} reinstalled C.K.
(for VTXC)

8^{00} Spitzer, Felst on shift
8^{20} Gas check O.K.
8^{27} ~~illeg~~ frequent "illegal Jet chamber data"
9^{10} short break the Quadrupol having had a waterleak last night will be properly tightened
~~run magnet down to 2000 A~~

There is a problem with the new readout program – If the beampipe chamber is OFF at the start of a run it does not switch from the Pedestal readout pattern to the normal readout.
J.O. will be able to fix it.
Possible in principle but no space in programs for it! J.O.
Don't start without vertexchamber on!

RUN	DATE	START	STOP	AT RUN START I^+	AT RUN START I^-	DEAD TIME (%)	TIME (sec)	RECORDS IN	RECORDS OUT	ALL $\times 10^6$	TØ REJ $\times 10^6$	T_1 ACC SUM	T_2 ACC SUM	T_1 Bit 2 $E_{tot} \geq 6$ GeV	T_2 BIT 17 2T. $E_t \cdot \Rightarrow$ 2TR

13[10] New program version: Flickering interface on color TV: "BEAMPIPE CHAMBER TRIP"
I will put the "noises" in soon.

13[40] VTXC - hard trip nearly every minute after TASSO asks PKR for optimization

13[50] I asked PKR to optimise again on the VTXC - anode - current signal and it decreased to 40 ($\approx 22\,\mu A$).
After this "Beulenkorrektur" we have stable conditions. Hageman

14[50] To attempt to ~~[illegible]~~ reduce the number of VTXC hard trips the collimators have been moved in.
If this causes problems for PKR during injection call the VTXC people to move them out again
(PKR cannot do this themselves).

15[10] FAMP ON

15[55] New version YCLRTV installed with beampipe chamber trip noises HEH

16[00] Matsumura and Cartwright (for Hedgecock) on shift 20.00 HEDGECOCK ARRIVES!!

16[30] JDAS readout error 45 — MP16 analysis incomplete; YY=1

16[40] Gas check done.

17[45] There have been no vertex chamber trips since 15[55] (when the inner detector went off too).

19[00] injection is possible with collimators in position

24[00] Chrin / Olsson

27/4/85 IBM error 54 on Colour TV, but data taking running. Colour TV program bug? ....

1[36] Beampipe ch. trip. What a nice beeping! 1[48] Again

Following sequence observed (has happened before too): Missing LAM pre-chambers (3:2), followed by S.C. Watchdog on in ~~Vertex~~ Latch readout, followed by Missing LAMs in Brl Cyl, several times.

2[01] happened again, followed by IBM error 54 on Colour TV. Run continues

2[05] 4th trip now of VXCH. That beep isn't so nice ...

5[55] Another soft vxch trip.

6[15] " " " "

8[00] Magnuson, Schneekloth

10[15] fill ready, started RUN 20425, VTX CH. tripped twice of RUN start

10[17] VTX CH. tripped

10[39] JDAS READOUT ERROR 74 - wrong LAM Nr. 1 cr. 1, VTX CH.

11[01] VTX CH. tripped

11[08] "

11[12] "

11[16] "

11[19] "

frequent VTX CH. trips, ID anode current 1,2 μA, TOF 1,2 V

Processors ON/OFF N50	MIP	TOF	FAMP	<L> 10^{30} cm^{-2}sec^{-1}	Bhabha $\int Ldt$ nb^{-1}	$\int Ldt$ exp. energy	IBM Tape OUTPUT	At Run Start ID (μA)	At Run Start TOF (V)	ONLINE REJ ~~SUPER~~ MIPROC T_2 %	ONLINE REJ NORD ~~50~~ T_1 & T_2 %	Σ_{Bhabha}	MH	E_{beam}	Mag. Field −1.8 gauss	Remarks

12:20 New version of YCLRTV - the "BEAMPIPE CHAMBER TRIP" message and alarms will only be produced if a run is in progress i.e. NOT when PAUSE or STOPPED. HEH

NOTE:- When starting a normal data-taking run (to the IBM) ALL detectors must be on - In particular if the beampipe chamber trips during the pedestal run (first 12 events) then NO detectors will be read out (NO LATCH BANK on TV). If the beampipe chamber trips after the pedestal run (PARAMETER SETTING FINISHED on JDAS terminal) then it is dealt with correctly.
Thus - do NOT start run with beampipe chamber tripped.
HEH

12:35 : Beams dumped

13:25 : New fill ready, tried to switch HV on, several VTX CH. trips, PKR tried to improve beam conditions

15:50 We can't switch on the VTX CH. We reduce the HV to 1400 V. Called PKR; they try to improve beam

13 58 ID, VTX, 2 CH. tripped, beams lost

14 48 started RUN 20431; VTX ch. HV ... at ... 1400 V

15 26 VTX, ID tripped

15 30 Run 20433: VTX ch. HV back to 1495 V. Anode current at 60 μA
→ It starts tripping again (15[31], 15[37], 15[49])

Do not play around with VTXC-Voltages!
It is useless to take data at 1400 V.
→ ask PKR to optimize beams! HK

15[55] JDAS error 33 - missing LAM Nr 3 cr 2 - pre chambers
50 - CAMAC crate offline Nr 3
53 - System crate watchdog flag
} almost simultaneously

16[00] Cartwright, Kawagoe on shift

16[20] VTXC soft trip

16[24] JDAS error 74 - wrong LAM Nr 1 cr 1: VTXC

16[25] Phoned PKR - asked them to try to optimise for our vertex chamber

16[40] VTXC anode currents now 20 μA! ("32 μA" on meter ÷ 33 + 10 ≈ 20 μA) good call Susan! HK

16[50] Gas check done

17[45] JDAS error 45 - MP16 analysis incomplete YY=1

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 $2T \cdot E_4 \geq 2TR$
102															
20411	26.4.85	16:04	17:09	3.39	3.46	11.4	3898	8002	3378	1014	116	4400	6285	832	24
20412	"	17:09	18:09	3.02	3.09	10.6	3569	6869	2813	929	99	3760	5523	688	20
20413	"	19:27	20:22	4.57	5.28	14.2	3280	8002	3708	853	121	3887	6405	801	30
20414	"	20:22	21 21	4 04	4.70	13.2	3785	8002	5708	907	120	4064	6351	855	21
20415	"	21 21	22 23	3.56	4.19	11.9	3699	8002	3554	948	113	4092	6311	805	36
20416	"	22 25	23 32	3.14	3.72	11.2	3868	8002	3345	1007	113	4372	6183	813	27
20417	"	23 32	0 34	2.78	3.32	11.0	3613	7148	2902	941	103	3972	5530	660	19
20418	27.4.85	1 19	2 09	4.84	5,36	17,9	2889	8001	3786	778	140	3531	6567	740	23
20419	"	2 09	3 00	4.32	4,81	16,0	3026	8002	3894	788	126	3751	6491	889	19
20420	"	3 00	3 02	3.85	4.32	15.9	60	223	114	16	2	104	139	20	1
20421	"	3 38	4 29	5,16	5,14	16.5	2991	8002	3877	779	129	3543	6498	798	24
20422	"	4 29	5 22	4,61	4,61	14.8	3149	8002	3716	820	122	3811	6341	850	24
20423	"	5 19	5 43	4.11	4.13	13.8	1174	2864	1286	305	42	1406	2263	289	3
20424	"	5 45	6 26	3.87	3.90	12.4	2439	5496	2533	635	78	2988	4248	585	13
20425	"	10 16	11 12	4.18	4.76	12.4	3306	8002	3951	860	106	3191	6317	570	23
20426	"	11 12	12 18	3.53	4.33	11.8	3599	8001	3186	936	110	3729	6425	672	23
20 427	"	12 20	12 35	3.19	3.94	12.4	870	2084	794	226	28	935	1633	149	9
20430	"	1345	1401	4.51	4.72	24.7	2638	2167	841	201	50	773	1809	178	6
20 431	"	1448	1530	4.95	5.15	22.8	1929	5291	2210	502	115	1905	4288	393	17
20 433	"	15 34	16 31	4.29	4.72	14.8	3190	8002	3561	830	123	3739	6179	84	25
20434	"	16 32	17 35	3.76	4.24	12.6	3766	8002	3573	980	124	4404	6327	795	15
20435	"	17 35	1841	3.33	3.80	11.1	3916	8002	3461	1019	113	4511	6155	859	22
20436	"	1841	1904	2.96	3.41	11.1	1316	2723	1157	342	38	1582	2001	276	4
20437	"	2046	2145	5.32	5.06	15.5	3458	7992	3821	894	139	4446	6216	847	20
20438	"	2147	22 05	4.69	4.44	16.0	1098	2070	2070	286	46	-	1960	313	-
20439	"	22 06	23 03	4.51	4.28	13.4	3418	8002	3826	889	119	4526	6215	927	30
20440	"	23 03	0 13	4.05	3.83	12.0	3710	8001	3639	966	116	4405	6248	876	31
20441	28.4.85	00 13	01 05	3 58	3.39	11.7	3069	6426	2802	799	94	3675	4775	682	15
20442	"	01 38	02 42	5.17	5.14	16.5	3278	8002	3901	853	141	4071	5955	814	30
20443	"	02 42	03 38	4.48	4.49	14.7	3239	8002	3818	842	123	4197	5676	865	14
20444	"	03 38	04 41	3.98	4.00	15.6	3605	8001	3829	938	146	4379	5765	836	27
20445	"	04 41	05 15	3.53	3.55	18.5	1851	4026	1932	507	94	2297	2783	399	10
20446	"	05 42	06 46	5.15	5.14	15.8	2893	8002	4310	978	123	4080	5565	825	15
20447	"	06 47	06 55	4.45	4.44	14.1	458	1385	825	115	17	621	842	136	5

Processors ON/OFF N50	MIP	TOF	FAMP	$\langle L \rangle$ 10^{30} cm^{-2}sec^{-1}	$\int L dt$ 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 -1 kGauss	REMARKS
103																
ON	ON	ON	ON	1.35	4.24	1058.91	IBM	0.8	1.3	49	60	48	1	21.800	-4842	
"	"	"	"	1.07	3.45	1062.36	"	0.7	1.0	50	62	39	1	"	-4841	
"	"	"	"	2.67	9.19	1071.55	"	1.0	1.3	44	56	104	5	"	"	
"	"	"	"	2.09	6.89	1078.44	"	0.9	0.7	46	56	78	3	"	-4841	
"	"	"	"	1.68	6.01	1084.45	"	0.9	0.6	45	58	68	1	"	-4841	
"	"	"	"	1.36	4.59	1089.04	"	0.8	0.55	49	61	52	0	"	-4840	
"	"	"	"	1.02	3.36	1092.40	"	0.7	0.45	44	62	38	2	"	-4840	Beams clumped.
"	"	"	"	2.63	7.69	1100.09	"	1.2	0.9	40	55	87	0	"	"	
"	"	"	"	2.30	6.96	1107.05	"	1.5	1.0	43	54	50	2	"	-4841	
"	"	"	"	2.55	0.15	1107.20	"	1.05	0.9	33	55	0	0	"	"	beams lost.
"	"	"	"	2.30	7.60	1114.80	"	1.3	1.1	41	55	86	1	"	"	
"	"	"	"	2.34	7.69	1122.49	"	1.2	0.9	43	56	87	1	"	"	
"	"	"	"	2.04	2.56	1125.05	"	1.2	0.9	44	58	29	1	"	-4840	hangup "No triggers"
"	"	"	"	3.03	5.39	1130.44	"	0.8	0.55	49	57	61	1	"	-4840	beams lost.
"	"	"	"	2.07	5.57	1136.01	"	1.6	0.8	46	53	63	5	"	4827	
"	"	"	"	1.12	3.09	1139.10	"	1.2	0.7	41	63	35	0	"	4841	
"	"	"	"	1.08	0.71	1139.81	"	1.4	0.7	38	65	8	0	"	4840	beam dumped
"	"	"	"	1.90	1.41	1141.22	"	2.2	1.1	31	63	16	1	"	4840	Vertex chamber at 1400 V, beams lost
"	"	"	"	2.32	4.86	1146.08	"	2.2	1.3	35	61	55	2	"	"	VTX CH at 1400V
"	"	"	"	2.17	6.21	1151.29	"	1.4	0.7	40	58	59	4	"	4842	VTX CH at 1475 V
"	"	"	"	1.79	6.71	1158.00	"	1.0	0.55	51	58	76	1	"	4841	
"	"	"	"	1.49	6.36	1164.36	"	0.6	0.45	50	59	72	1	"	4841	
"	"	"	"	1.29	2.21	1166.57	"	0.6	0.4	50	60	25	0	"	4841	Beams dumped
"	"	"	"	3.00	9.10	1175.67	"	1.3	0.8	45	54	103	3	"	4841	
"	"	"	"	2.29	2.52	1178.19	"	0.8	0.7	0	0	0	0	"	4840	(using ANT-TEST) TEST RON without vertex-chamber
"	"	"	"	2.29	9.01	1187.20	"	0.8	0.6	48	55	102	1	"	4841	
"	"	"	"	1.63	5.92	1193.12	"	0.75	0.52	50	57	67	1	"	4841	
"	"	"	"	1.32	4.24	1197.36	"	0.6	0.5	50	59	48	2	"	4841	BEAMS DUMPED
"	"	"	"	2.93	9.19	1206.55	"	1.00	0.75	45	54	104	1	"	4840	
"	"	"	"	2.52	8.04	1214.59	"	0.85	0.57	43	55	91	4	"	4839	
"	"	"	"	1.81	5.74	1220.33	"	0.75	0.5	47	55	65	2	"	4839	
"	"	"	"	1.48	3.27	1223.60	"	0.6	0.45	47	55	37	1	"	4840	Beams dumped
"	"	"	"	3.04	9.63	1233.23	"	1.0	0.7	37	48	109	1	"	4840	
"	"	"	"	2.80	0.80	1234.03	"	0.9	0.6	17	42	9	0	"	4841	
								0.8	0.5							

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 $E_{LE} \geq 6$ GeV	T_2 BIT 17 2T. $E_T \cdot \geq 2$TR

17^{50} YSPY susp TOF TDC no hits 35 & 77

18^{25} VTXC trip – first for 2 hours – not clear what happened as the anode current is very low (20 μA in the meter = 16 μA approx). Maybe there was a short spike of beam.

18^{49} JDAS error 33 – Missing LAM br 2 cr 4 : TOF2 cts

18^{45} Std hists reveal big spike in tagging hitmap – but Steve Wagner is in the States and there is no Lancastrian here at the moment – ignore it for the time being

19^{03} Beams dumped. TASSO call to say MARK J request 10 minutes access to deal with a gas leak

19^{10} CAMAC error during magnet reading – Mux channel not set

20^{40} New fill ready

20^{50} JDAS error 33 : Missing LAM br 2 cr 4 – TOF2 cts

20^{52} Vertex chamber hard trip

20^{55} Wrong LAM br 1 cr 1 : VXC

20^{57} Another VTXC hard trip

20^{59} Wrong LAM br 1 cr 1 again — is this a consequence of getting the VTXC back into the readout?

21^{02} Another VTXC hard trip, followed by wrong LAM error. Clearly connected.
Phone PKR – they say they have tried to optimise but it cost too much lumi at the other interaction regions. They will try again.

21^{14} They weren't very successful apparently, as the VTXC trips again ...

21^{26} Another VTXC hard trip. Oddly the anode current did not seem high – 40 μA on meter = 23 μA actual. Maybe the background is asymmetric. (I went down and looked. It is a bit asymmetric. Assuming that the meters are Q1–4 vertically down, Q4 is higher than the rest.)

21^{30} Another VTXC hard trip. Phoned duty VTXC expert (Ramcke). He says if situation does not improve, run without vertex chamber for half an hour, then try again.

21^{40} Another VTXC hard trip (7 so far this fill). Stop run, start new run without vertex-chamber. (I did this using ANY-TEST – that clearly was the wrong way to do it, as no online rej. done!)

22^{00} VTXch OK – start new run with it in.

22^{07} IBM error 54 on screen – but we are still sending data OK. This happened yesterday, or rather, early today too.
Phoned Jan Olsson – he says this appears to be a bug, not a real error, and may be connected with having the FAMP on. He says log it if it happens, but ignore it!

22^{45} Vertex chamber hard trip – first one for over an hour. Followed by wrong LAM br 1 cr 1 as usual.

22^{48} Another VTC " " . But VTXC anode current meter reads only 30 μA (= 19 μA true anode current).

22^{53} VTXC tripped again.

Processors ON/OFF N50	MIP	TOF	FAMP	<L> 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 MUPROC T_2 %	ONLINE REJ NORD 50 T_1 & T_2 %	Σ_{Bhabha}	MH	E_{beam}	Mag. Field −1 = ground	Remarks

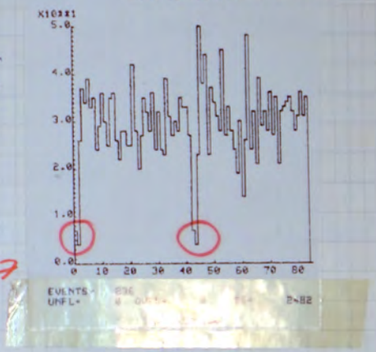
22^{55} YSPY DETECTED ERR ; TRIGGER 2 OUTPUT MISSING ; 145

23^{00} Run ends – no run number – Gould plotter locked up. Switch off/on — works again at 23^{30} and 23^{38}, 23^{05} 01, 02, 042

23^{07} YSPY - TOF TDC no hits - 0 1 42 43

23^{20} JDAS error 33 missing LAM br 5 cr 2 : id ring 1

Checked HV buffalos. Switched off/on and will keep an eye on the problem (RH).
This fault occurred several times. I think it may be an ADC problem. Pause/Continue may clear. Starting new run soon. (RH.)



28.4.85

0^{00} Hedgecock, Becker

0^{15} Gas check

0^{24} JDAS error 33 - missing LAM br. 2 cr. 4
YSPY err : TOF TDC NO HITS : 58

00^{45} GAS CHECK COMPLETED.

01^{40} ID. soft trip / VTX ch. trip

02^{10} 74 (WRONG) MISSING) LAM BR 1 CR 1 B.P CHAMBER (ABOUT 8 TIMES)
PAUSE/CONTINUE SEEMS TO CLEAR PROBLEM.

03^{00} YSPY : TOF TDC no hits : 0, 1, 42, 43

03^{16} JDAS err. 46 MP-16 out of sequence

03^{27} YSPY : TOFTDC no hits : 0, 42

03^{40} VTX-ch. trip — SPEAK TO PKR — NO IMPROVEMENT IT SEEMS

04^{15} VTX-CH TRIP. — AGAIN TALK TO PKR.

04^{28} " " " , 04^{35}, 04^{42}, 04^{46}, 04^{51}, 04^{56}, 04^{58}, 05^{00}, 05^{02}, ...

05^{15} BEAMS DUMPED ??

05^{40} New fill : Continuously VTX-ch. trips

06^{00} Some calls to PKR – no improvement → HV to 1450 (no improvement) Run 20446

06^{50} YSPY : DL8 no response : 34 → " " 1430

07^{00} Stop run – DL8 #34 changed

07^{30} → Several hits on VTX after running ramp of to 1400V Run 20449

8^{00} Dieckmann, Ramcke

8^{30} Call to PKR to improve beam condition - they try to tune theorbit – no improvement!
PKR says beam little bit asymmetric, but they couldn't change the situation
VTXC-HV 1400V - Wait for new filling

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 · E_4 · ⇒2TR
20448	28.4.85	07^{58}	8^{25}	4.20	4.22	15.0	3413	8002	7452	888	133	4520	5752	906	17
20449	"	8^{07}	9^{08}	3.86	3,73	12.1	3563	8001	7546	927	112	4452	5896	818	22
20450	"	9^{17}	8^{19}	3,20	3.27	8.3	96	236	105	25	2	121	152	28	1
20452	"	10^{24}	11^{20}	5.30	5.31	13.8	3159	8001	3825	823	113	4079	8757	883	29
20453 NO LATCH 8 4UK															
20454	"	11^{86}	12^{22}	4.57	4.62	11.3	3274	8002	3529	852	96	4300	6420	897	24
20455	"	12:22	13^{23}	4.07	4.12	11.5	3561	8002	3513	927	106	4415	6309	902	20
20456	"	13:23	14:20	3.63	3.68	11.2	3154	6626	2686	821	92	3745	5260	721	18
20457	"	15.15	15:24	5.38	5.07	11.3	511	1263	606	133	15	639	973	124	4
20458	"	15:28	15:41	5.22	5.16	11.7	742	1890	889	170	23	942	1497	209	3
20459	"	16:11	17.03	5.19	5.14	13.3	3109	8002	3813	809	107	4063	6479	907	24
20460	"	17:06	17.31	4.64	4.59	18.6	1635	4387	2288	426	79	2245	3000	470	10
20461	"	17:32	18:27	4.37	4.32	13.5	3243	8002	3738	844	114	4235	6096	887	24
20462	"	18^{37}	19:26	3.92	3.89	10.6	3521	8002	3636	916	97	4417	6170	869	23
20463	"	19^{47}	20^{10}	3.51	3.49	9.9	3563	5404	2267	666	66	3000	4262	553	10
20464	"	20^{45}	21^{37}	5.39	5.09	14.0	3111	8002	3830	810	113	4036	6220	910	20
20465	"	21^{57}	22^{32}	4.84	4.56	12.1	3235	8001	3538	842	102	4099	6389	907	28
20466	"	22^{32}	23^{29}	4.34	4.08	11.4	3431	8001	3497	893	102	4356	6273	948	16
20467	"	23^{30}	0^{33}	3.89	3.65	11.9	3762	8002	3438	979	117	4419	6233	895	20
20468	29/4/85	0^{33}	1^{01}	3.48	3.26	10.2	1674	3650	1566	436	44	2025	2805	406	10
20469	"	3^{45}	4^{40}	5.15	5.32	12.6	3189	8002	3851	830	105	4033	6433	904	30
20470	"	4^{41}	5^{38}	4.54	4.75	11.2	3400	8002	3600	884	99	4222	6318	847	21
20471	"	5^{38}	6^{38}	4.02	4.26	11.1	3568	8001	3562	928	102	3287	6234	869	17
20472	"	6^{38}	7^{42}	3.57	3.82	10.0	3777	8001	3372	983	98	4536	6228	887	16
20473	"	10:09	10:10	4.28	4.69	12.5	20	101	61	5.2	0.65	43	47	4	1
20474	"	June – no data													
20475	"	12:44	13.43	4.72	5.42	12.5	3503	8002	3695	911	113	4109	6905	845	23
20476	"	16:47	17:49	4.40	5:35	10·8	3643	8002	3570	948	103	4238	6560	802	20
20477	"														
20478	"	18.26	18.51	3.36	4.29	10.1	1399	2932	1229	364	87	1584	2431	293	8
20479	"														
20480	"	19.02	20.10	3·12	4.01	10.2	4027	8002	3192	1048	107	4487	6648	792	19
20481	"	20:10	20:28	2.74	3.57	9.0	1021	1976	762	266	24	1130	1565	187	5
20482	"	22:34	23:32	5.18	5.14	11.5	8414	8002	3550	888	102	4133	6641	858	19
20483	"	23·32	0^{16}	4.54	4.54	11.0	257	6663	2560	669	74	3233	4835	620	46

Summary

N50	MIP	TOF	FAMP	⟨L⟩ 10^{30} cm^{-2}sec^{-1}	∫Ldt nb^{-1}	∫L dt Exp. energy	IBM/Tape OUTPUT	At Run Start ID (μA)	At Run Start TOF (V)	ONLINE REJ. SUM HIP T_2 %	ONLINE REJ. NORD 50 $T_1 + T_2$ %	Σ_{Bhabha}	MH	E_{beam}	Mag. Field −1 = gauss	Remarks
on	on	on	on	2,13	8.75	1242.78	IBM	0.8	0.5	50	56	99	63	21.800	-4841	
"	"	"	"	1.84	6,10	1248.80	"	0,7	0,4	48	58	69	—	"	-4879	
"	"	"	"	1,50	5,27	1249.07	"	0,6	0,4	39	61	3	—	"	-4835	Beam dumped
"	"	"	"	3.36	10.62	1259.69	"	1.0	0.7	42	54	106	4	"	-4841	
"	"	"	"	2.65	8.68	1268.37	"	"	"	46	57	102	1	"	-4840	
"	"	"	"	2.07	6,98	1275.35	"	1.0	0.6	47	58	79	0	"	-4841	
"	"	"	"	1,72	4.68	1280.03	"	0.9	0.5	48	61	53	1	"	-4842	Beams dumped
"	"	"	"	3,45	1.76	1281.79	"	1.1	0,75	41	54	19	1	"	-4841	Hang up.
"	"	"	"	3.35	2,47	1284.26	"	1.0	0.75	41	54	28	1	"	-4841	Beams lost
"	"	"	"	2.47	10·95	1295·21	"			43	54	124	8	"	-4841	
"	"	"	"	2.67	4.06	1299·27	"	1.1	0.75	41	52	46	1	"	-4841	Hang up
"	"	"	"	2.22	7·33	1306·60	"	1·0	0·7	44	55	83	3	"	-4840	
"	"	"	"	1.87	5·92	1312·52	"	0·9	0·6	45	58	67	1	"	-4840	
"	"	"	"	1.49	3.62	1316.14	"	0·8	0·5	47	59	41	0	"	-4840	Beams dumped
"	"	"	"	2.92	8.75	1324.89	"	1·2	0·8	41	54	99	4	"	-4840	
"	"	"	"	2.45	7.07	1331.96	"	1.1	0,7	43	57	80	2	"	-4840	
"	"	"	"	2·18	7·95	1339·91	"	1,0	0,6	46	58	90	2	"	-4840	
"	"	"	"	1.73	6.36	1346·27	"	0·8	0·55	47	59	72	0	"	-4841	
"	"	"	"	1.58	1.94	1348.21	"	0.7	0.50	46	59	22	1	"	-4841	Beams lost
"	"	"	"	2.97	9.81	1358.02	"	1.1	0.90	42	53	111	2	"	-4840	
"	"	"	"	2.54	8.66	1366.68	"	0.9	0.60	43	56	98	1	"	-4841	
"	"	"	"	2.11	7·52	1374.20	"	0.8	0.55	47	57	74	4	"	-4840	
"	"	"	"	1.66	6.01	1380.21	"	0·8	0·45	47	59	68	1	"	-4841	
"	"	"	"	2.09	0.27	1380.48	"	0.9	0.62	15	48	3	0	21.800	-4841	Beams lost
								1.0	0.8							
"	"	"	"	3.05	9.63	1390.11	"	1.0	0.75	46	55	109	2	21.800	-4841	beams lost
"	"	"	"	2.85	10·87	1400·98	"	~~1.1~~ 0·7	0·7	46	57	123	4	"	-4842	
								0·9	0·5							NORD HANG UP.
"	"	"	"	2.09	3.36	1404·34	"	0·9	0·5	48	60	38	2	"	-4840	ID trip.
								0·8	0·45							JUNK.
"	"	"	"	1.69	5·57	1409·91	"	0·8	0·45	48	67	63	2	"	-4840	
"	"	"	"	1.46	1.15	1411·06	"	0·7	0·4	50	65	13	0	"	-4841	beam dumped
"	"	"	"	2.97	10.16	1421.22	"	1·2	0·8	45	57	115	1	"	-4841	
"	"	"	"	~~2.32~~	5.65	1426.87	"	1.1	0.6	45	59	64	0	"	-4840	

RUN	DATE	START	STOP	AT RUN START I^+	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 $E_{LG} \geq 6$ GeV	T_2 BIT 17 2T· E_4 ·≥2TR

9.10 Tasso asks for new filling, Run 20451 stopped Gas check done

NOTE: Remember to switch **ON** FAMP (F_{15} F_9 3 0) each time you ~~reload~~ ZDAS or restart NORD
(The reform tapes with FAMP ON are being passed immediately through REDEC1 step. So far no problems have been detected.)
P. Laurikainen

11.40 Zetso off
13.00 VTXC disabled at the moment (hardware problems)

To the shift crew: Switch the VTXC on as normal, but do not wonder about missing anode currents, empty histograms, etc.
(PUR gets the ID current signal again)
HK

13.15 ZDAS READOUT ERROR 45 Mp-16 analysis incomplete : yy=1
14:10 JetC - Softtrip
14:12 Tasso asks for new filling, Run 20456 stopped
15⁰⁰ Zetso on
15²⁶ ~~the~~ No Triggers for ... seconds, deadtime 100% Pause/Cont doesn't help
Exit & Reload ZDAS ok. Also the IBM ERROR ØØ message has now disappeared.

16⁰⁰ Stylen and Kawagoe
川越 ⤳ 川越 (KAWA GOE) 清 ... (KIYO TOMO)

YSPY4 TOF TDC no hits : 1 43
16³⁰ Gas Check Done.

JDAS readout error 45 - M-16 analysis incomplete ; yy=1
17⁰⁵ New run
17¹⁰ JDAS readout error 33 - Missing LAM branch 2 crate 4 : TOF 2 counter

4) YSPY detected err. TOF TDC no hits : 1 43
" " " " " " : 0 42
" " " " " " 0 1

17²⁸ 100% dead time no events . pause/cont doesn't cure it. Stop & restart does.
17³² Run start
YSPY TOF TDC no hits : 0 42
" " " ... 0 1 42

Processors ON/OFF N50	MIP	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 (μA)	TOF (V)	ONLINE REJ SUB MIPROC T_2 %	NORD 50 T_1 & T_2 %	Σ_{Bhabha}	MH	E_{beam}	Mag. Field	Remarks

18⁰⁹ 100% dead time Pause continue works OK.
YSPY TOF TDC no hits : 60

20⁰⁵ New fill in 15 mins in fact it was ~ two mins!!
21²⁶ JDAS READ OUT ERROR 33 - Missing LAM branch 2 crate 4 : TOF 2 counters
21³⁸ JDAS READOUT ERROR 33 - Missing LAM branch 3 crate 2 : Muon chambers
" " " 53 - System crate watchdog flag PARMS = 000002 140204 (OCT)
22³⁷ Run Summary for Run 20465 didn't appear.
→ Gould Printer power OFF/ON ⟶ copy ok.

23¹⁴ JDAS READOUT ERR 33 - Missing LAM branch 2 crate 4 : TOF 2 counters

29/4/85 0⁰⁰ Hagemann + Hughes on shift

0²⁵ Gas check done.
1⁰¹ beams lost
1⁴³ short break after unsuccessful injection

4²⁸ Std-hists : Trigger bit 29 vanished (since run 20459)

5⁴⁸ JDAS READOUT ERROR 46 - MP-16 out of sequence ; YY=1
5⁴⁹ " " " 45 - MP-16 Analysis incomplete ; YY=1
7⁴² Nord hung up after end of run 20471 (no ~~normal~~ automatic print of run summary) · file error
↑ could had 'sparked'. "NO RUN SUMMARY" instructions in JDAS Ops manual describe what to do.

8⁰⁰ Howard Mills and Hans Rieseberg on shift.
"Injection"
Software trouble in NORD - Rebuilt SINTRAN and JDAS
Reset CAMAC crystal-controlled precision clock - it was 4 minutes Fast! HM

10⁰⁵ New fill ready . Run 20473 start . Big fraction of beam lost after ½ min
Kado et al. test VTXC under HV . Chamber is now filled with the old gas (Ar : CO_2 : Methan = 90 : 9 : 1)
Q 3 is quiet.
10⁴⁰ "SHORT BREAK" Magnet → 3000 A
11³⁰ Magnet → 7500
J. Olsson checks the missing trigger bit. Bit is present on the front side of NU BOX : Green LD # 5 in A11 is flashing (in cosmic run) missing in histog.
A11 exchanged

RUN	DATE	START	STOP	AT RUN START I^+	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 $E_{LG} > 6$ GeV	T_2 BIT 17 2T. E_4 ≥ 2TR

110 29.4.85 cont'd.

12^{40} New fill ready (trigger bit)
Run 20475: still missing.
J. Olsson touches a few cables on the rear side. Trigger bits reappears!

multihadronic events still come...

run 20475 ends - and the beams are lost,

Test version of NORD-50 program loaded - it fills some extra histograms. By default the original version will be loaded when NORD reloaded. (HH)

15^{00} New ZREAD / VTXC - Software for Acc 2160+ installed C.K.

JADE ONLINE EVENT DISPLAY

13:31:54 29/04/1985

EXPT 26 RUN 20475 EV 6433

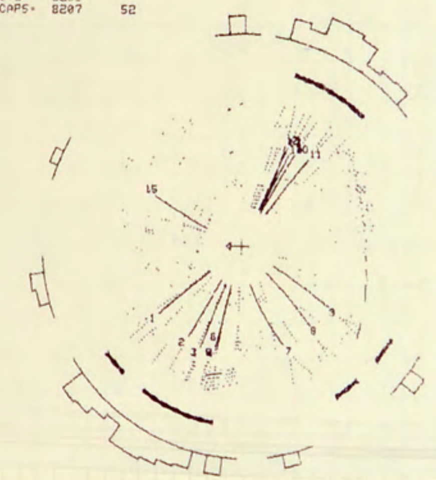
ACT T1acpt T1post T2bits T2c
171 004002 040401 17 100211

Field -4842 G Beam 21.800 GeV
Current e+ 4.25 mA e- 4.94 mA

HADRONIC EVENT MULT.=14

Z-V N-50 -16 (3) & 0 (-3)
No. ID tracks found = 15

Length= 5175
IDHITS= 844
ELCTOT= 11558
MUHITS= 34
LGCYL= 3299
LGCAPS= 8207 52



Meinke, Stephens on shift

16^{00} power supply for nova interface still broken. Experts are working on it, since

16^{45} beams

16^{47} Run start
17^{49} # 20477
Nord Hang up no response.

Trig	N10	N50	N10	IBM
811	613	611	267	239

restart JDAS. restart NORD

18^{07} IBM Problems - can't start a run
18^{25} run started
JDAS readout error 33 (missing LAM TOF 2, CR4)
18^{50} ID ~~trip~~
Run # 20479 Junk

Processors ON/OFF N50	MIP	TOF	FAMP	<L> $10^{30}cm^{-2}s^{-1}$	Bhabha ∫Ldt nb^{-1}	∫Ldt Exp, energy	IBM / Tape OUTPUT	At Run Start ID (μA)	TOF (V)	ONLINE REJ MIPROC T_2 %	NORD 50 T_1 & T_2 %	Σ Bhabha	MH	E_{beam}	Mag. Field	Remarks

111

19^{30} JDAS error 33 - Missing LAM branch 2 crate 4: TOF 2 counters.
19^{40} " " 46 - MP-16 out of sequence; YY = 1

YSPY Trigger 2 output missing: 147

20^{00} Mach J now coordinating - Beam Dump soon

20^{30} Gas check

30 April 1985

00^{00} Kawagoe, Skard on shift
00^{16} No events. Pause/Continue didn't help. New run started - everything OK
00^{35} JDAS readout error 45 - MP-16 analysis incomplete: YY = 1 ; Twice. ~~[illegible]~~
00^{59} —— " —— 46 - MP-16 out of sequence: YY = 1
01^{30} YSPY DETECTED ERR: TRIGGER 2 OUTPUT MISSING; 55 151 167
01^{47} JDAS ERROR 33 - Missing LAM branch 4 crate 6; I.D. Ring 2.
01^{54} " " " " " branch 6 crate 4; I.D. Ring 3 > pi
01^{57} YSPY DETECTED ERR; TRIGGER 2 output missing; 105, 137
02^{25} YSPY DETECTED ERR: TOF TDC NO HITS; 60
2^{30} As soon as Run 20486 started, beams dumped. R20486 has only pedestal events. and No RUN SUMMARY.
3^{15} Gas Check Done.
5^{24} "NORD-50 BUSY" soon after run start. Program reloaded → OK.
5^{50} I.D. & VTXC soft trip. Again at 6^{10}.
6^{16} Hang-up: No events. Run stopped, new run started - OK
6^{18} JDAS ERROR 45 - MP-16 analysis incomplete: YY=1
6^{36} " " " again! And again 6^{40}.
7^{05} JDAS " 33 - Missing LAM branch 2 crate 4: TOF2 counters

08:00

Becker & Chrin.

8^{10} Gas check
8^{12} IBM busy - Pause - call to 3219
8^{35} The Return of the IBM Link.
9^{03} ID + VTX Ch. soft trip
9^{08} Missing Lam branch 2 crate 3 : TOF1 counters. [JDAS error 33]

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. $E_T \geq$ 2TR
112															
20484	30.4.85	00 17	1 21	3.90	4.17	10.2	3799	8002	3205	987	101	4423	6469	854	25
20485	"	1 21	2 30	2.82	3.22	9.4	4098	8002	3052	1067	~~4641~~ 4641		6367	817	19
20486		JUNK		only			pedestal		data						
20487	30.04.85	5 22	5 24	4.64	5.24	10.8	55	181	82	15	2	78	125	11	0
20488	"	5 27	6 15	4.59	5.19	12.8	2573	6833	2605	620	86	2954	4937	602	49
20489	"	6 17	7 17	4.21	4.76	11.8	3601	8001	3309	937	110	4183	6790	788	32
20490	"	7 18	8 46	3.81	4.33	11.0	3696	8002	3340	961	106	4313	6528	888	20
20491	"	8 46	9 45	3.33	3.80	10.1	3286	6575	2545	855	87	3654	5389	662	28
20492	"	9 45	10 01	3.04	3.49	12.0	763	1543	576	157	24	876	1208	168	6
20493	"	11 52	11 59	5.24	5.39	13.9	344	925	401	89	12	432	775	19	1
20494	"	12 00	12 37	5.16	5.30	15.5	2224	5588	2528	579	80	2703	4715	580	21
20495	"	12 40	13 36	4.82	4.94	13.1	3314	8002	3552	862	113	4063	6812	916	34
20496	"	13 36	14 32	4.36	4.49	12.4	3323	8002	3468	865	107	4173	6734	931	33
20497	"	14 33	15 37	3.94	4.07	11.5	3711	8002	4695	566	111	4422	6574	879	15
20498	"	15 38	16 00	3.53	3.66	11.6	1264	2663	1539	329	38	1492	2186	283	3
20499	"	17 04	18:09	4.40	4.52	11.3	3813	8002	3351	992	112	4354	6730	839	23
20500	"	18:09	19 13	3.86	4.01	10.8	3811	8001	3369	992	106	4516	6400	876	30
20501	"	19:14	19 34	3.48	3.67	9.9	1124	2370	911	292	28	1317	1794	241	6
20502	"	20 39	21 45	4.15	4.61	10.6	3948	8001	3359	1027	109	4336	6618	800	21
20503	"	21:45	22:54	3.59	4.15	10.1	3910	8002	3272	1017	103	4622	6256	864	18
20504	"	22:54	0:03	3.14	3.68	10.4	4092	8001	3163	1065	110	4638	6282	856	21
20505	1.5.85	0:03	0:24	2.76	3.28	9.3	1204	2363	934	313	29	1381	1801	220	5
20506	"	1:21	2:18	5.17	5.39	13.1	3342	8002	3541	870	114	4059	6633	893	25
20507	"	2:18	3:15	4.56	4.78	12.4	3387	8002	3537	881	109	4197	6410	929	27
20508	"	3:15	4:15	4.05	4.26	11.0	3569	8002	3363	928	103	4380	6238	897	23
20509	"	4:15	5:22	3.60	3.80	10.1	3872	8002	3193	1007	102	4596	6232	884	22
20510	"	~~7.16~~ 8. 18	8. 18	5.23	5.34	12.2	3436	8002	3435	893	109	4010	6840	845	32
20511	"	8:19	9:17	4.47	4.74	12.9	3502	8002	3396	911	117	4297	6480	914	26
20512	"	9:18	10:19	3.78	4.27	11.0	3652	8002	3316	950	104	4472	6252	892	16
20513	"	10.20	11.25	3.55	3.84	10.5	3903	8002	3236	1015	106	4607	6235	901	24
20514	"	11.26	12.05	3.15	3.41	10.2	2310	4597	1775	600	61	2675	3535	491	9
~~20517~~ 20517	"	13:03	13:52	5.32	5.41	15.1	2949	8001	3599	767	118	3515	6347	905	23
20518	"	13.53	14.44	4.73	4.83	14.4	3072	8001	3567	799	114	4043	6403	977	15
20519	"	14:53	15:36	4.12	4.22	12.8	2534	6243	2608	659	84	3245	4833	669	15

PROCESSORS ON/OFF N50	MIP	TOF	FAMP	<L> 10^{30} cm^{-2} sec^{-1}	$\int L dt$ 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 %	$\sum$ BHABHA	MH	E_{beam}	MAG FIELD Gauss	REMARKS 113
ON	ON	ON	ON	1.51	6.36	1433.23	IBM	1.0	0.55	48	61	72	1	21.800	-4840	
"	"	"	"	1.23	4.42	1437.65	"	0.75	0.42	50	63	50	2	"	-4840	
																Beams dumped.
ON	ON	ON	ON	1.27	0.18	1437.83	IBM	1.1	0.8	30	59	2	0	21.800	-4840	Nord-50 hang-up
"	"	"	"	1.78	3.62	1441.45	"	1.1	0.8	47	58	41	5	"	-4840	
"	"	"	"	1.40	4.33	1445.78	"	1.0	0.64	47	60	49	4	"	-4841	
"	"	"	"	1.13	5.21	1450.99	"	0.9	0.6	47	60	59	1	"	-4840	
"	"	"	"	0.94	3.36	1454.35	"	0.8	0.54	49	63	38	1	"	-4841	
"	"	"	"	0.78	0.44	1454.79	"	0.8	0.52	49	64	5	0	"	-4840	Beams dumped
"	"	"	"	2.00	0.44	1455.23	"	1.2	0.94	42	59	5	0	"	-4841	"No-Trigger" hang up
"	"	"	"	1.44	3.18	1458.41	"	1.25	0.98	45	57	36	0	"	-4841	" " " "
"	"	"	"	1.56	5.04	1463.45	"	1.2	0.8	45	57	57	2	"	-4843	
"	"	"	"	1.21	4.24	1467.69	"	1.05	0.82	46	58	48	1	"	-4843	
"	"	"	"	1.14	4.77	1472.46	"	0.95	0.64	48	42	54	2	"	-4844	N50 Pattern recog. not reporting events for purpose of frame test.
"	"	"	"	1.08	1.36	1473.82	"	0.9	0.6	50	43	10	0	"	-4844	Beams dumped.
"	"	"	"	1.73	6.58	1480.40	"	1.0	0.7	849	59	83	2	"	-4843	
"	"	"	"	1.45	5.52	1485.92	"	0.8	0.5	49	59	63	0	"	-4844	
"	"	"	"	1.25	1.41	1487.33	"	0.75	0.45	50	61	18	0	"	-4841	Partial beam loss. Beams dumped.
"	"	"	"	1.43	5.63	1492.96	"	0.9	0.5	48	59	69	1	"	-4840	
"	"	"	"	1.61	6.28	1499.24	"	0.8	0.5	50	61	91	0	"	-4840	
"	"	"	"	1.36	5.39	1504.63	"	0.7	0.4	51	62	61	1	"	-4840	
"	"	"	"	1.08	1.86	1506.49	"	0.6	0.35	49	62	21	0	"	-4840	Beams dumped
"	"	"	"	3.14	10.69	1517.18	"	1.2	0.85	43	57	121	1	"	-4841	
"	"	"	"	2.50	8.66	1525.84	"	1.2	0.65	44	57	98	2	"	-4841	
"	"	"	"	2.08	8.66	1534.50	"	1.0	0.55	45	59	98	4	"	-4841	
"	"	"	"	1.67	6.01	1540.51	"	0.9	0.5	48	62	68	2	"	-4840	Beams dumped
"	"	"	"	2.40	9.10	1549.61	"	1.2	1.0	45	58	103	4	"	-4849	
"	"	"	"	1.83	7.52	1557.03	"	1.1	0.6	46	55	84	1	"	-4850	
"	"	"	"	1.78	6.10	1563.13	"	1.0	0.5	48	60	71	2	"	-4847	
"	"	"	"	1.75	6.71	1569.84	"	0.8	0.45	49	61	76	0	"	-4850	
"	"	"	"	1.48	4.51	1574.35	"	0.7	0.4	49	63	51	1	"	-4850	Beams dumped
"	"	"	"	3.14	9.17	1583.29	"	1.4	0.8	29	56	108	1	"	-4850	
"	"	"	"	2.65	9.72	1593.61	"	1.3	0.7	42	57	110	4	"	-4850	~~Beams lost~~
"	"	"	"	2.28	6.10	1599.71	"	12	0.6	41	60	69	2	"	-4848	Beams lost

RUN	DATE	START	STOP	AT RUN START I^+	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 Bit2 $E_{L4} > 6$ GeV	T_2 BIT17 2T·E_4·≥2TR

9^{40} YSPY Detected Error : TOF TDC No hits : 40 82.
New YHDISP & test version of NORD-50 program installed (IBM)

11^{50} IBM busy – call 3219 – after some minutes o.k.
12^{00} "No triggers" – PAUSE / CONT. does not help – stop the run – start again
12^{14} YSPY : TOF TDC no hits : 0, 42, 43
12^{21} " " " " " : 1, 43
12^{38} "No triggers" – PAUSE/CONT. does not help – stop run – start
13^{15} TOF TDC No hits Ø 42 43.
13^{23} .. .. 1 42 43.
13^{30} .. .. Ø 1 42.
} This shows up in the standard histogram.

13^{30} Standard – Histogram check.

Jetc Mean A+ & A– histogram has a whole for wire (No. in ~~range~~ 465-470).
(Trying to call Expert). → Elsen informed.
TOF – Hit Map
TOF Mean TDC I, II & III. } These histograms have either zero entries or low no of entries for counters 1, 42 & 43.
Who do we contact? B. Naroska & H. Krehbiel are NOT here.

14^{33}
Run # 20497 → Famp Test. Nord 50 Pattern recognisition ~~not~~ is operational but NOT rejecting for purposes of Famp Test.

14:33 Beampipe chamber wrong LAM branch 1 crate 1

15^{20} TOF / FWTOF HV Fail? Jdas error 52 → controlword ØØØØØ21
15^{59} N50 pattern rej back on from now on (R 20499)

16^{00} Diechman + Hughes Gas check done
22^{41} ID + VTX soft Trip

1 May 1985
0^{00} Keith Stephens and Hans Riesebarg
Note : The evening shift noted the INT LUMI instead of the BHABHA INT LUMI in the run list. The INT LUMI is 2.7 nb^{-1} lower than the Bhabha INT. LUMI in the period 4 PM to midnight.

Processors ON/OFF N50	MIP	TOF	FAMP	<L> 10^{30} $cm^{-2}s^{-1}$	Bhabha $\int Ldt$ nb^{-1}	$\int Ldt$ exp, energy	IBM/Tape OUTPUT	At Run Start ID (μA)	TOF (V)	ONLINE REJ SUB MIPROC T_2 %	NORD 50 T_1 & T_2 %	Σ Bhabha	MH	E_{beam}	Mag. Field	Remarks

0^{24} Stops for refilling
Gas check done
1^{20} New fill ready. Start Run # 20506
Smooth running with a few ERROR messages.
YSPY TOF TDC NO HITS 0 1 42 43) TRIGGER 2 OUTPUT MISSING
0 42 133
0 42 83
0 1 42 45 141 159
0 20 42 149 161
0 1

JDAS Readout error 33 Missing LAM 2.4
2.4

" 45 : MP-16 out of sequence : YY=1 ////

YVOLTS : L6 distributor 12 Primary HV = 1879 should be 1870
and 13 " 1879 " 1870

Histograms ok

5^{11} Z ch. trip.
5^{22} Stops for refilling. 5^{40} SHORT BREAK (Energy = 0!)
Problems with feed back. "Will not last long"

6^{20} Magnet → 3000 A
6^{50} Injection, Magnet → 7500 A

7^{12} Start run.

8.00 Kuhlen, Spitzer
13.03 When we tried to start a run with the new fill, we got "YPARA, Error during LG pedestal run, see JDAS console" and at JDAS console "TOF bank wrong length, = 364". We found no instruction for this case, tried it several times, looked at several crates, and after a while we succeeded in starting a run.

16^{00} Ayre + Kawagoe

16^{50} Gas Checklist Completed.
17^{07} Beams Ready – "Luminosity Run" TOF(volts) 1.0 Start Run 20520.
17^{20} I.D. & VtxC soft trip.

RUN | DATE | START | STOP | AT RUN START I+ I− | DEAD TIME (%) | TIME (sec) | RECORDS IN | RECORDS OUT | ALL *10^6 | TØ REJ *10^6 | T1 ACC SUM | T2 ACC SUM | T1 Bit2 E_{LG}>6GeV | T2 BIT 17 2T· E4 ·≥2TR
Processors ON/OFF N50 MIP TOF FAMP | <L> $10^{30}cm^{-2}s^{-1}$ | Bhabha ∫Ldt nb^{-1} | ∫Ldt Exp, energy | IBM/Tape OUTPUT | At Run Start ID (μA) TOF (V) | ONLINE REJ SUM MIPROC T2 % NORD 50 T1 & T2 % | Σ Bhabha | MH | E_{beam} | Mag. Field (−1 gauss) | Remarks

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 $2T\cdot E_4 \geq 2TR$
20520	1.5.85	17.09	18^{04}	5.45	5.58	13.9	3071	8002	3641	799	111	3959	6529	887	26
20521	"	18^{04}	18^{57}	4.74	4.91	13.7	3176	8002	3693	826	113	4150	6347	933	23
20522	"	18^{57}	19^{50}	4.19	4.37	12.0	2547	6607	2862	717	86	3573	5244	715	13
20523	"	23^{19}	0^{07}	5.62	4.98	13.6	2205	5278	2419	573	77	2588	4409	539	23
20524	2.5.85	junk													
20525	"	1^{21}	1^{26}	5.28	5.34	14.1	252	745	384	65	9	332	570	63	0
20526	"	junk													
20527	"	1^{38}	2^{27}	5.06	5.12	14.9	2933	8002	3773	763	114	3928	6511	911	26
20528	"	2^{27}	3^{21}	4.50	4.57	13.7	3226	8002	3610	839	114	4113	6522	900	48
20529	"	3^{21}	4^{14}	4.01	4.08	11.5	3126	7291	3068	813	94	3860	5826	768	20
20530	"	4^{48}	5^{42}	5.62	5.65	17.5	2951	8002	3904	768	134	3946	6705	893	28
20531	"	5^{43}	6^{35}	4.88	4.97	14.1	3066	8001	3808	798	113	4122	6670	969	29
20532	"	6^{35}	7^{32}	4.35	7.44	12.7	3412	8001	3648	887	112	4377	6658	965	28
20533	"	7^{33}	8^{35}	3.89	3.17	11.2	3664	8001	3376	953	107	4584	6313	923	22
20534	"	8^{36}	9^{29}	3.45	3.53	10.5	3045	6240	2543	792	83	3667	4878	694	14
20535	"	10^{02}	10^{35}	5.74	5.81	14.5	1921	5210	2493	499	72	2707	4048	619	16
20536	"	10^{49}	11^{38}	5.17	5.19	14.9	2964	8002	3868	771	114	4214	6672	965	28
20537	"	11^{40}	11^{53}	4.62	4.65	15.3	741	1889	872	192	29	1013	1544	229	7
20538	"	13^{57}	14^{54}	4.78	5.51	13.3	3364	8002	3844	876	116	4123	7005	910	27
20539	"	14^{55}		4.21	4.92			~3200	1125						
20540	"	15^{17}	16^{16}	4.02	4.72	12.1	3530	8002	3569	919	111	4536	6544	920	33
20541	"	16^{17}	17^{19}	3.38	4.24	11.4	3725	8002	3417	859	110	4613	6338	947	24
20542	"	17^{28}	18^{27}	3.14	3.76	11.3	3477	7205	3053	905	102	4263	5648	801	9
20543	"	19^{23}	20^{30}	5.91	5.99	17.4	2962	8001	3974	770	134	4106	6654	1032	31
20544	"	20^{36}	21^{28}	4.91	5.00	16.9	3109	8001	3992	809	137	4334	6622	999	23
20545	"	21^{29}	22^{25}	4.33	4.43	13.9	3290	8002	3737	856	119	4410	6571	1024	26
20546	"	22^{25}	22^{26}	3.82	3.95	0.0	0	40	27	0	0	22	0	7	0
20547	3/5/85	1^{27}	2^{27}	5.98	5.88	18.1	2984	8001	4199	776	140	3965	6832	958	23
20548	"	2^{28}	2^{50}	5.10	5.01	16.9	1270	3515	1744	331	56	1787	2926	434	9
20549	"	2^{54}	3^{48}	4.79	4.74	14.6	3265	8002	3736	849	124	4301	6580	990	25
20550	"	3^{49}	4^{49}	4.23	4.16	12.4	3589	8002	3548	934	116	4537	6390	958	28
20551	"	4^{49}	5^{01}	3.73	3.67	11.3	696	1548	671	181	21	888	1229	174	2
20552	"	5^{39}	5^{42}	5.97	6.00	23.2	113	400	206	30	7	190	246	32	1
20553	"	6^{09}	6^{15}	6.14	6.15	23.9	342	965	525	89	21	438	783	107	4

RUN	PROCESSORS N50	MIP	TOF	FAMP	<L> $10^{30}cm^{-2}s^{-1}$	∫L dt nb^{-1}	∫L dt EXP, ENERGY	IBM/TAPE OUTPUT	AT RUN START ID (μA)	TOF (V)	ONLINE REJ SUM MIPROC T_2 %	NORD-50 T_1+T_2 %	Σ Bhabha	MH	E_{beam}	Mag. Field	REMARKS
20520	ON	ON	ON	ON	3.59	10.78	1610.49	IBM	1.4	1.0	41	56	122	2	21800	−4849	
20521	"	"	"	"	2.94	8.66	1619.15	"	1.2	0.7	43	55	98	3	"	−4850	
20522	"	"	"	"	2.43	6.02	1625.17	"	1.1	0.6	46	56	68	0	"	−4850	Beams lost, Nord jam, No Summary (see next page)
20523	"	"	"	"	2.73	6.63	1631.80	"	1.3	0.8	43	56	75	2	"	−4847	Beams lost
20524																	No event
20525	"	"	"	OFF	3.44	0.80	1632.60	"	—	—	34	50	9	0	"	−4856	
20526																	No event
20527	"	"	"	OFF	3.31	12.19	1644.79	"	1.4	0.8	41	54	138	1	"	~~−4856~~	
20528	"	"	"	OFF	2.76	7.51	1652.30	"	1.2	0.7	44	56	85	1	"	−4850	
20529	"	"	"	OFF	2.22	5.21	1657.51	"	1.3	0.6	44	59	59	3	"	−4850	beams dumped
20530	"	"	"	OFF	3.34	8.75	1666.26	"	1.5	1.2	44	53	99	5	"	−4847	
20531	"	"	"	OFF	3.04	10.07	1676.33	"	1.1	0.8	46	54	114	4	"	−4848	
20532	"	"	"	OFF	2.08	6.98	1683.31	"	0.9	0.7	49	56	79	1	"	−4848	
20533	"	"	"	ON	2.04	7.42	1690.73	"	0.9	0.6	49	59	84	2	"	−4849	
20534	"	"	"	"	1.58	4.59	1695.32	"	0.7	0.5	51	61	52	1	"	−4848	beams dumped
20535	"	"	"	"	3.85	6.72	1702.04	"	1.2	0.9	43	53	76	4	"	−4844	stopped for V34 repair
20536	"	"	"	"	2.96	8.39	1710.43	"	0.8	1.0	47	53	95	1	"	−4847	
20537	"	"	"	"	2.42	1.86	1712.29	"	0.9	0.7	48	56	11	0	"	−4849	beams lost
20538	"	"	"	"	2.64	8.75	1721.04	"	1.0	1.25	48	53	99	1	"	−4843	
20539									0.9	0.7						−4843	Run stopped successfully but no other tasks worked. Reloaded Nord [illegible]
20540	"	"	"	"	2.02	7.33	1728.37	"	0.8	0.6	50	57	83	1	"	−4841	
20541	"	"	"	"	1.76	7.24	1735.61	"	0.8	0.5	50	59	82	3	"	−4841	
20542	"	"	"	"	1.54	5.37	1740.98	"	0.6	0.5	51	59	56	3	"	−4842	beams dumped
20543	"	"	"	"	3.87	12.63	1753.61	"	1.2	0.4	45	52	143	8	"	−4842	
20544	"	"	"	"	3.16	10.07	1760.67	"	1.0	0.8	48	51	114	4	"	−4841	
20545	"	"	"	"	2.58	8.48	1769.15	"	0.7	0.8	48	55	82	1	"	−4841	
20546	"	"	"	"	0.0	0.09	1769.24	"	?	?	0	48	1	0	"	−4840	run paused till 22^{46} L6 power supply problem, beams dumped 0.00
20547	"	"	"	"	4.52	12.46	1781.70	"	1.2	1.0	45	49	141	4	"	−4841	
20548	"	"	"	"	4.13	5.39	1787.09	"	1.1	0.7	45	52	61	0	"	−4841	Nord 50 Hang up. (crash)
20549	"	"	"	"	3.26	10.95	1798.04	"	1.0	0.65	47	55	124	3	"	−4840	
20550	"	"	"	"	2.62	8.83	1806.87	"	0.9	0.55	49	57	100	3	"	−4863	
20551	"	"	"	"	2.45	1.68	1808.55	"	0.8	0.45	51	59	19	0	"	−4841	beam dumped
20552	"	"	"	"	3.86	0.35	1808.90	"	1.2	1.0	30	53	4	0	"	−4841	Beam lost
20553	"	"	"	"	4.79	2.21	1811.11	"	1.2	1.1	38	48	25	0	"	−4843	beams lost

RUN	DATE	START	STOP	AT RUN START I^+	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 $E>6$ GeV	T_2 BIT 17 $2T \cdot E_4 \cdot >2TR$

19^{40} Beam loss. Z-ch, Vertex Ch & ID all trip
Reset alarms but cannot stop alarm from NORD printer console nor stop run with
Control console (9) — No function keys work ∴ No Run Summary of Course!
Copy down Colour TV & Display scalers.
Petra filling. Eventually find control Terminal (9) not on line.
Now Stop run + obtain Run Summary

← ~~Why? did you check its~~ JDAS ~~terminal had started?~~ i.e. did o~~thers work? See JDAS manual~~

23^{25} All chambers tripped.

2 May 1985

0^{00} Magnussen + Komamiya
0^{06} Gas check OK
Beams lost, all chambers tripped

What "hang up"? Did Nord crash or did just the JDAS terminal jam? More information!

1^{15} Nord hung up → restart O.K.
1^{30} Try to switch on the FAMP
1^{35} Nord hung up again → restart

Also true: It has been updated! A computerized manual is being considered.

The instruction manual is not complete
no label for SLAVE 2 & SUPERVISOR

Thanks for pointing out. Now they are back!

→ We leave FAMP OFF !!!

2^{00} TOF TDC no hits 0, 1, 42, 43
3^{00} "
" Holes in the TOF hit map → TDC #1 might be broken
⇒ pushed the TDC in → holes have gone!

7^{33} FAMP ON again, no analysis done (runs 20533-7)

8^{00} H. Mills & M. Kuhlen on shift

10^{10} A V34 in JETchamber gives no hits - also missing T2 bits. Call E. Elsen. (Run 20535)
10^{50} V34 repaired.
" ^{20} REFORM job submitted
YSPY program updated to include checking of the beampipe chamber wireside hit map.
This brings the program very close to its limit.
$13^{0?}$ FAMP ON, analysis done again (version PATHOBJ3)

NOTE to shift crew: When Nord is restarted (JDAS rebuilt ~~reloaded~~) you must turn FAMP ON (see p. 108).
P.L. Normally you don't have to reload FAMP, only when you get the flashing red message NO EVENTS FOR XXX SECONDS after starting a run, you may try it. The reason for the message could be unrelated to FAMP even then. If it occurs in the middle of a run, it almost certainly has nothing to do with FAMP.

Processors ON/OFF N50	MIP	TOF	FAMP	$\langle L \rangle$ 10^{30} cm^{-2}s^{-1}	Bhabha $\int Ldt$ nb^{-1}	$\int Ldt$ exp, energy	IBM/Tape OUTPUT	At Run Start ID (μA)	TOF (V)	ONLINE REJ MIPROC T_2 %	NORD 50 T_1 & T_2 %	Σ Bhabha	MH	E_{beam}	Mag. Field	Remarks

15^{15} Strange Nord happenings:- data taking ran normally but all other tasks (colour TV etc) just stopped.
Stopped run & restarted the computer. Everything fine.

16^{00} Laurikainen, Ramcke on shift
17^{50} JDAS readout err 33 M.CAM 4.6 Ring 2
46 MP-16 out of sequence YY=1 2 times
TOF TDC No Hits 51 41
" 60
20^{45} JDAS read err 45 MP-16 ana. incompl. 2 times
22^{45}

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0^{00} Hagemann + Stephens on shift

One of PMT's of Leadglass caused H.V. overcurrent. Then the HV main-power supply was broken due to the overcurrent.
We changed HV main supply. and disconnected the cable of the PMT, that caused the overcurrent. Now we can take the data.

But; Though we had two extra HV power supplies before the '85 run, ~~each of them~~ already two HV power supplies were broken ~~and~~
That means that we have no extra H.V. supplies !!

One broken H.V. is now being repaired in EPOS. Today's broken one should be also, as soon as possible.
I will ask Takeda or Kobayashi at CERN, that they send a HV supply, that they have there.

K. Kawagoe //

0^{24} Gas check done

Note to shift crew: When HV of vertex chambers runs up the meter shows an increasing current up to 60. After the chamber has reached its "On"-state the current drops on meter below O(that means in detail < 10 μA). J. Hagemann
(only valid for test phase)

JDAS read out error 46 - MP-16 out of sequence; YY=1

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 E_T > 6GeV	T₂ BIT 17 2T. E_T > 2TR	Processors ON/OFF N50	MIP	TOF	FAMP	<L> 10³⁰ cm⁻²sec⁻¹	Bhabha ∫Ldt nb⁻¹	∫Ldt EXP. energy	IBM Tape OUTPUT	At Run Start ID (μA)	At Run Start TOF (V)	ONLINE REJ MIPROC T₂ %	ONLINE REJ NORD SQ T₁ & T₂ %	Σ Bhabha	MH	E_beam	Mag. Field	Remarks

2⁵⁰ NSO crash Abort NSO restarts OK.

3²⁷ JDAS readout error 45: MP-16 analysis incomplete; YY=1

4⁰⁰ " " " 33 Missing LAM branch 2 Crate 3: ToF1 counters

4¹⁰ " " " 46 - MP-16 out of sequence, YY=1

>4²⁰ Sometimes "IBM BUSY"

5⁰⁰ Mark J → new fill ASAP

0800 Matsumura, Skard on shift

8¹⁵ "Switch off high voltage": Chambers tripped during run-down. Beam dost.

8¹⁸ Gas check done.

This was only electronic noise (problem with new alarm box) (HK)

Beampipe chamber tripping during run start. Have removed it from the readoutpattern (was 77777B now 77737B run 20557 onwards).
When a run starts YPARA will remind you of this on the system console (HEM)
Beampipe chamber HV can be left off.

1330 Susan Cartwright replaces JA Skard on shift

1350 Tested the "broken" HV power supply. It is working now. But I'm not sure its long-time stability. (E. Kawagoe)

1440 Nord hangup level 11 488 System seems to be corrupt - needs rebuilding during injection

1445 FAMP error 1 2637 during pedestals of run 20562 (after reloading Nord)

Standard histograms now has 4 trigger bits histograms replacing the original single one.

15⁰⁰ Nord died level 14 when a user logged in - had suggested not to use it due to system problems.

1540 Mark J say they will ask for a new fill at 4pm, so we stay run and start rebuilding the corrupt Nord system.

1610 Nord Operating system & JDAS rebuilt. A test run (nvon) worked fine. HE

Beware - the JDAS terminal sometimes goes OFFLINE - just press LINE key to get LED on

RUN | DATE | START | STOP | AT RUN START I+ I− | DEAD TIME (%) | TIME (sec) | RECORDS IN | RECORDS OUT | ALL *10^6 | TØ REJ *10^6 | T1 ACC SUM | T2 ACC SUM | T1 Bit 2 E>6GeV | T2 BIT 17 2T·E4·≥2TR | Processors ON/OFF N50 MIP TOF FAMP | ⟨L⟩ | ∫Ldt | ∫Ldt Exp, energy | IBM/Tape OUTPUT | At Run Start ID (μA) TOF (V) | ONLINE REJ SUM MIPROC T2 % NORD-50 T1 & T2 % | Σ Bhabha | MH | E beam | Mag. Field | Remarks

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 $2T \cdot E_4 \geq 2TR$
20554	3.5.85	7^{01}	7^{27}	6.0	6.0	19.3	1536	4275	2179	399	77	2077	3679	530	16
20555	"	7^{56}	8^{16}	5.98	5.98	25.6	1137	3085	1665	296	76	1412	2751	379	13
20557	"	11:10	11 31	4.86	5.38	11.1	1197	2966	1356	311	35	1443	2510	~~314~~	11
20558	"	12:00	12:54	5.34	5.29	13.4	3159	8002	3835	823	110	4159	6891	960	14
20559	"	12:54	13^{36}	4.72	4.69	11.7	2381	5951	2847	620	73	3152	5086	672	25
20560	"	13^{41}	14^{38}	4.27	4.23	10.3	3398	8002	3612	885	91	4541	6438	956	20
20561	"	14^{33}	14^{40}	3.78	3.76			133	57			No run summary			
20562	"	14^{44}	$\sim 15^{00}$	3.76	3.75			2672	812						
20563	"	15^{03}	15^{43}	3.63	3.61	8.8	2365	5304	2267	615	54	3091	4093	629	10
20564	"	16:54	17:07	4.39	5.96	12	723	1954	985	188	23	968	1629	209	9
20565	"	18:53	19:44	5.17	5.73	12	3045	8002	3892	493	95	4023	6597	908	21
20566	"	19:44	20:14	4.55	5.10	13	1627	4664	2724	423	57	2113	3320	466	15
20567	"	20:33	21:28	4.10	4.62	11	3296	8001	3680	858	96	4495	6159	952	22
20568	"	21:28	22:28	3.66	4.15	11	3575	8001	3571	832	99	4637	6213	968	33
20569	"	22:29	23:16	3.27	3.74	9	2793	6100	2536	427	63	3541	4769	655	21
20570	4.5.85	23:52	0:24	5.66	6.06	15.1	1853	5350	2829	483	73	2856	4278	647	24
20571	"	0:26	1:13	5.16	5.56	15.8	2784	8002	4195	727	115	4323	6471	1075	24
20572	"	1:14	2:08	4.56	4.94	14.1	2896	8002	4075	754	106	4303	6630	1037	26
20573	"	2:08	3:14	3.99	4.35	10.6	3319	8002	3789	864	92	4632	6442	1020	31
20574	"	3:14	3:16	3.45	3.79	9.0	52	176	84	14	1	94	98	19	1
20575	"	5:24	6:19	5.81	5.74	13.8	2839	8002	4180	765	106	4278	6532	981	20
20576	"	6:20	6:33	4.97	4.96	13.0	425	1184	614	110	14	663	967	136	6
20577	"	7:06	7:57	5.79	5.73	18.3	2886	8002	4047	751	137	4086	6467	9'1	27
20578	"	7^{57}	8^{46}	6.06	4.60	13.7	2901	8001	3927	755	104	4296	6348	932	30
20579	"	8^{46}	9^{40}	4.55	4.12	12.2	3193	8002	3724	830	101	4538	6247	988	37
20580	"	9^{40}	10^{37}	4.07	3.68	9.5	3409	8001	3665	887	85	4689	6154	932	19
20581	"	10^{8}	11^{30}	3.65	3.29	9.3	3107	7080	3077	808	75	4208	5229	816	24
20582	"	11^{54}	11^{58}	5.96	5.96	20.2	221	689	351	57	12	346	499	78	2
20583	"	12^{35}	13^{21}	6.11	6.02	20.8	2694	7717	3933	701	146	3987	6302	947	27
20584	"	13^{54}	14^{40}	5.89	5.94	26.6	2724	8002	4351	709	189	4043	6639	1034	33
20585	"	14^{40}	15^{27}	5.22	5.25	22.2	2773	8002	4290	722	160	4249	6820	1068	34
20586	"	15^{27}	16^{17}	4.64	4.69	15.5	2948	8002	4049	767	119	4346	6391	1048	30
20587	"	16^{18}	17^{13}	4.15	4.20	11.4	3256	8002	3831	847	96	4592	6427	1044	31
20588	"	17^{13}	18^{12}	3.70	3.75	9.0	3541	8001	3565	921	83	4739	6174	964	22

RUN	Processors ON/OFF N50	MIP	TOF	FAMP	⟨L⟩ $10^{30} cm^{-2} s^{-1}$	∫Ldt nb^{-1}	∫Ldt Exp, energy	IBM/Tape OUTPUT	At Run Start ID (μA)	TOF (V)	ONLINE REJ SUM MIPROC T_2 %	NORD-50 T_1 & T_2 %	Σ_{Bhabha}	MH	E_{beam}	Mag. Field −1 × gauss	Remarks
20554	ON	ON	ON	ON	4.23	5.65	1816.76	IBM	1.2	1.2	44	50	64	1	21.800	-4840	beams dumped after partial beam loss
20555	ON	ON	ON	ON	3.96	4.77	1821.53	IBM	1.2	1.2	43	47	54	2	21.800	-4841	Beams lost
20557	"	"	"	"	3.88	3.98	1825.51	"	1.3	0.8	42	56	45	0	21.800	-4844	Run 20556 junk beams lost
20558	"	"	"	"	3.72	10.16	1835.66	"	1.4	1.0	47	53	115	4	21.800	-4840	
20559	"	"	"	"	3.13	5.83	1841.49	"	1.0	0.6	48	53	64	1	"	-4843	Stopped to deal with LG HV
20560	"	"	"	"	2.42	8.22	1849.71	"	0.9	0.6	49	56	93	1	"	-4844	
20561	"	"	"	"		small!		"	0.8	0.53					"		Nord died, level 11
20562	"	"	"	"	1.85	1.50	1851.21	"	0.8	0.5					"		" " " 14
20563	"	"	"	"	2.04	4.86	1856.07	"	0.8	0.5	49	58	55	3	"	-4844	Stopped to rebuild Nord system
20564	"	"	"	"	3.88	2.81	1858.88	"	1.1	1.0	43	57	26	1	"	-4842	Senderausfall
20565	"	"	"	"	3.98	12.11	1870.99	"	1.2	1.0	43	52	138	0	"	-4844	048 exchanged
20566	"	"	"	"	3.05	4.96	1874.95	"	1.1	0.8	2465	43	65	0	"	-4842	
20567	"	"	"	"	2.33	7.68	1882.63	"	1.1	0.7	46	55	93	1	"	-4843	
20568	"	"	"	"	1.83	6.54	1889.17	"	1.0	0.6	49	56	90	4	"	-4843	
20569	"	"	"	"	1.78	4.96	1894.13	"	0.9	0.5	49	60	44	0	"	-4841	beams dumped
20570	"	"	"	"	4.60	8.13	1902.26	"	1.2	1.2	46	48	52	2	"	-4841	"No triggers" hung up
20571	"	"	"	"	3.85	12.46	1914.72	"	1.1	0.9	46	49	141	2	"	-4842	
20572	"	"	"	"	3.47	9.89	1924.61	"	1.0	0.8	47	50	112	0	"	-4841	
20573	"	"	"	"	2.65	7.69	1932.30	"	1.0	1.0	50	54	87	2	"	-4841	
20574	"	"	"	"	2.59	0.35	1932.65	"	0.7	0.66	33	58	4	0	21.802	-4841	beams dumped
20575	"	"	"	"	4.46	12.54	1945.19	"	1.2	1.2	46	49	142	4	21.800	-4840	
20576	"	"	"	"	3.89	1.68	1946.87	"	1.0	0.7	50	50	19	0	"	-4842	Senderausfall
20577	"	"	"	"	3.15	7.42	1954.29	"	1.3	1.2	43	51	84	2	"	-4843	
20578	"	"	"	"	2.83	7.42	1961.71	"	1.2	0.8	45	51	84	3	"	-4841	
20579	"	"	"	"	2.28	7.51	1969.22	"	1.0	0.7	48	55	85	3	"	-4842	
20580	"	"	"	"	1.84	6.10	1976.02	"	0.8	0.6	49	55	77	0	"	-4841	
20581	"	"	"	"	1.45	3.62	1979.64	"	0.7	0.5	48	58	41	3	"	-4843	beams dumped
20582	"	"	"	"	3.53	0.62	1980.26	"	1.4	1.3	37	57	7	0	"	-4841	beams lost
20583	"	"	"	"	3.69	9.81	1990.03	"	1.35	1.35	44	50	111	3	"	-4842	beams lost
20584	"	"	"	"	3.54	10.51	2000.54	"	1.3	1.6	44	47	119	2	"	"	
20585	"	"	"	"	3.08	9.28	2009.82	"	1.1	1.2	47	47	105	2	"	-4844	
20586	"	"	"	"	2.50	7.38	2017.20	"	1.0	0.9	48	51	73	3	21.802	-4844	
20587	"	"	"	"	2.18	7.09	2024.29	"	0.9	0.7	50	53	90	1	21.800	-4844	
20588	"	"	"	"	1.75	5.33	2029.68	"	0.8	0.6	50	57	61	2	"	"	
									0,7	0.45							

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 $E_{lab} \geq 6$GeV	T_2 BIT 17 2T. $E_t \cdot \geq 2$TR

3.5.85

16:00 Hughes + Heinzelmann

17:15 Senderausfall

4.5.85

0^{00} Becker, Chrin

0^{10} Gas check

0^{15} "No events" - PAUSE/CONT. does not help - Stop the run -o.k.

0^{38} JDAS readout err. 33

1^{10} "No triggers" - PAUSE/CONT.

1^{50} Jdas Readout Error 45 → MP16 analysis incomplete ; YY=1.

2^{00} Vertex and I.D. soft trip.

2^{05} " " " " " → background not particularly favourable at the moment! Ask for optimization

2^{35} "No Triggers" - Pause/Cont. 0 Rays.

2^{37} Z-chamber hard trip.

3^{20} Magnet Fluctuation

6^{01} YSPY : JETC D18 no hits : 45

6^{05} JDAS err. 45

6^{07} YSPY : JETC D58 no hits : 45

7:25 Jdas Readout Error 33 - Missing data branch 2 crate 3 ; TOF1 Counters ; TOF2 counters (crate 4)
" " " " " " 3 " 4 ; Z Chamber Part 1
" " " 52 - controlword 04 1604.
∝ Then ALL chambers trip!

7:28 Restart Run → Missing Lam branch 2 crate 3 again.

8^{00} Kawagoe and Kleinwort

8^{15} Gas check done

9^{13} JDAS readout error 45 - MP-16 analysis incompleted ; YY=1

9^{26} JDAS readout error 33 Missing CAM branch 3 crate 4 ; Z chamber part 1
" " " " branch 2 crate 3 ; TOF1 counters X Y times

9^{50} YSPY DETECTED ERR ; TRIGGER output missing ; IRQ

9^{55} JDAS readout error 45 - MP-16 analysis incompleted ; YY=1

10^{03} " " " 33 - Missing Lam BR 4 CR 6 ID Ring 2

10^{33} " " " " " " 2 3 TOF1 counters

10^{58} " " " " " " 2 4 TOF2 "

Processors ON/OFF N50	MIP	TOF	FAMP	<L> 10^{30}/cm²sec	Bhabha $\int Ldt$ nb⁻¹	$\int Ldt$ exp. energy	IBM Tape OUTPUT	At Run Start ID (μA)	At Run Start TOF (V)	ONLINE REJ MFPROC T_2 %	ONLINE REJ NORD 50 T_1 & T_2 %	Σ_{Bhabha}	MH	E_{beam}	Mag. Field	Remarks

14^{23} JDAR readout error 45 MP16 analysis incomplete YY=1

14^{30} FAMP ERROR: 1415 1527

$14^{40}/14^{47}$ JDAS error 45 - MP-16 analysis incomplete YY=1

15^{46} JDAS readout error 33 - Missing CAM branch 4 crate 6 ; I.D. Ring 2.

15^{50} " " branch 3 crate 1 ; I.D. current

" " branch 2 crate 3 ; TOF counters x (4)

4.5. 16^{00} Eben + Test 16^{10} yes check done

JDAS error 33 BR 4 CR 6 (ID ring 2)

45 MP - analysis incomplete YY=1

45 "

17^{00} After the last 2 runs printing of the run summary only started after powering off and on the line printer.

19^{50} JDAS error 45 MP - analysis incomplete YY=1

20^{20} JETC high current - trip.

21^{00} Hard ramp up level 14

21^{15} JDAS error 33 b 4 c 6 ID ring 2

22^{20} Beam loss. Short break.

5,5, 0^{00} Dietrich & Kado

0^{10} JDAS Readout Error 46 MP-16 out of sequence

0^{12} JDAS 4 " 52 controlword 000600

1:00 Gas check done

2:00 bad beams : ID hard trip, several soft trips, frequent message : "Jetchamber high current"

2:50 ID hard trip

5:00 "

5:11 "

5:20 ID soft trip

5:31 "

5:36 "

5:47 ID hard trip PKR will try to optimize beams, but they can not do anything against the "spikes"

5:50 "

6:37 "

6:47 "

6:46 "

6:57 "

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 $E_{LG} \geq 6$ GeV	T_2 BIT 17 2T · E_4 · ⇒2TR
20589	4.5.85	18:13	19:01	3.8	3.35	8.5	2814	6061	2575	732	62	3722	4626	691	19
20590	"	19:31	20:21	5.90	5.96	21.2	2780	8002	4261	723	153	4196	6502	1006	32
20591	"	20 21	20 29	5.15	5.21	20.7	336	1064	550	87	18	544	820	142	4
20592	"		w. print out												
20593	"	21 05	21 26	5.74	5.77	18.9	1159	3638	2008	301	57	1924	2980	492	16
20594	"	21 27	22 14	5.44	5.48	26.2	2839	8002	4216	738	193	4152	6709	1082	34
20595	"	22 15	22 20	4.83	4.88	15.6	170	525	270	44	7	280	438	59	0
20596	"	23 49	0 47	5.86	5.72	19.6	2796	8002	4251	727	142	4092	6568	975	32
20597	5.5.85	0:48	1:38	5.02	4.88	15.5	2849	8002	4143	742	115	4432	6362	1001	29
20598	"	1:39	2:42	4.45	4.32	17.9	3701	8001	3863	806	96	4565	6249	1038	26
20599	"	2:42	3:30	3.86	3.77	9.3	2585	6129	2820	672	63	3593	4687	730	26
20600	"	4.43	5.55	5.84	5.85	26.1	2826	8002	4589	736	191	3875	6430	919	27
20601	"	5:55	6:18	4.69	4.86	18.2	1070	3011	1536	263	48	1500	2324	378	11
20602	"	6:20	7:30	4.40	4.58	13.4	2970	8002	3841	773	104	4243	6326	937	35
20603	"	7.31	8.26	3.68	3.90	10.8	3319	8002	3618	864	92	4261	6284	937	18
20604	"	8 27	9 01	3.30	3.50	9.0	1988	4498	2023	518	47	2608	3464	521	20
20605	"	9 33	9 56	5.97	5.97	23.8	167	575	312	43	10	262	387	70	3
20606	"	10 33	11 34	5.45	5.97	15.2	2892	8002	3930	753	114	4089	6575	917	29
20607	"	11 34	12 33	4.62	4.27	10.7	3140	8002	3843	817	88	4425	6280	1002	30
20608	"	12 34	13 33	4.03	3.80	10.3	3289	8001	3613	856	88	4524	6139	1000	25
20609	"	13 33	14 00	3.61	3.39	9.8	2205	5071	2223	574	56	2863	3911	604	19
20610	"	14 26	14 33	6.01	6.03	28.3	382	1187	598	100	28	545	900	120	5
20611	"	15 35	16 05	6.05	6.09	19.4	3779	8002	4270	723	141	4184	6481	1024	24
20612	"	16:25	17:14	4,80	4,28	13.3	2952	8001	3867	768	102	4362	6369	1031	28
20613	"	17:15	18:08	4.25	3.78	11.2	3175	8002	3697	826	83	4480	6236	1011	33
20614	"	18:08	19:02	3.80	3.36	10.4	3458	8002	3574	801	93	4616	6161	985	28
20615	"	19 08	19 21	3.41	3,00	10.3	732	1721	764	190	20	970	1266	188	3
20616	"	20:24	21:10	5,82	5,83	28.7	2736	8002	4630	712	212	3973	6253	898	37
20617	"	21:11	21:55	5,23	5,31	23,2	2671	8001	4248	697	162	4041	6390	817	30
20618	"	21:56	22:44	4,72	4,80	17.7	2894	8002	3912	753	134	4154	6420	982	28
20619	"	22:45	23:08	4.25	4,34	13.9	1321	3720	1781	344	49	1983	2844	476	13
20620	"	23 53	00.03	5.81	5.76	31.3	540	1539	789	141	44	716	1188	179	6
20621	6/5/85	00:55	1.07	5.92	5.92	27.4	659	1852	951	171	47	846	1530	204	11
20622	"	1:42	2:29	5.54	5,52	18.5	2819	8001	4033	734	136	4008	6395	962	24
20623	"	02:30	3:18	4.95	4.71	15.8	2904	8002	3918	756	120	4242	6487	988	26

Processors ON/OFF U50	MIP	TOF	FAMP	⟨L⟩ 10^{30} cm^{-2}sec^{-1}	Bhabha $\int Ldt$ nb^{-1}	$\int Ldt$ 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 & T_2 %	Σ Bhabha	MH	E_{beam}	Mag. Field	Remarks
ON	ON	ON	ON	1.37	3.86	2033.54	IBM	0.7	0.45	53	59	31	0	21.800		
ON	ON	ON	ON	3.77	10.47	2044.01	"	1.3	1.4	45	48	111	5	"	-4841	
"	"	"	"	2.93	0.88	2044.89	"	1.1	1.3	50	50	10	0	"		beam trip
								1.3	1.4							Nord hang up
"	"	"	OFF	3.68	4.27	2048.26	"	1.2	1.3	46	46	55	0	"	-4842	Forgot to reload FAMP
"	"	"	ON	2.84	8.13	2057.33	"	1.2	1.2			92	2	"		FAMP on
"	"	"	ON	2.92	0.50	2057.89	"	1.2	1.2	50	51	6	0	"	-4842	beam loss
"	"	"	ON	3.54	9.72	2067.61	"	1.3	1.3	44	48	110	3	"	-4842	
"	"	"	"	3.16	7.07	2074.68	"	1.1	1.0	47	49	80	0	21802	-4841	
"	"	"	"	2.38	7.95	2082.63	"	1.0	0.8	48	53	90	3	21800	-4844	
"	"	"	"	2.04	5.04	2087.67	"	0.8	0.6	49	55	57	0	21802	-4843	beams dumped
"	"	"	"	3.15	8.84	2096.51	"	1.4	1.3	40	44	100	3	"	-4842	
"	"	"	"	2.99	2.74	2099.25	"	0.8	1.4	39	50	37	1	21800	-4841	trigger box hang up
"	"	"	"	2.12	6.78	2106.23	"	0.9	0.9	44	53	79	1	"	-4842	
"	"	"	"	1.85	6.13	2112.36	"	1.1	0.7	47	56	64	1	"	-4842	
"	"	"	"	1.74	3.46	2115.82	"	1.0	0.6	48	58	39	2	"	"	beam dumped
"	"	"	"	3.06	0.51	2116.33	"	1.6	1.5	28	67	11	0	"	-4841	beams lost
"	"	"	"	3.18	9.20	2125.53	"	1.4	1.4	44	52	106	2	"	-4842	
"	"	"	"	2.51	7.88	2133.41	"	1.1	0.8	46	53	98	5	"	-4840	
"	"	"	"	2.05	6.73	2140.14	"	1.0	0.8	47	56	71	2	"	-4844	
"	"	"	"	1.64	3.61	2143.75	"	"	"	47	57	40	2	"	-4841	beams dumped
"	"	"	"	3.72	1.42	2145.17	"	1.6	1.4	35	51	19	1	"	-4843	beams lost
"	"	"	"	3.12	9.89	2155.06	"	1.7	1.7	44	48	112	4	"	-4843	
"	"	"	"	2.59	8.22	2163.28	"	1.2	1.0	46	53	93	4	"	-4844	
"	"	"	"	2.09	7.33	2170.61	"	0.9	0.8	47	55	83	0	"	-4844	
"	"	"	"	1.65	5.21	2175.82	"	0.9	0.7	48	56	59	2	"	-4842	
"	"	"	"	1.37	0.71	2176.53	"	0.9	0.55	44	57	8	0	"	-4842	beams dumped.
"	"	"	"	2.81	7.42	2183.95	"	1.5	1.5	39	47	84	2	21802	-4844	
"	"	"	"	2.40	4.35	2188.30	"	1.5	1.2	41	48	56	1	"	-4843	
"	"	"	"	2.04	5.57	2194.47	"	1.4	1.0	44	51	63	3	"	-4840	
"	"	"	"	2.03	3.27	2197.74	"	1.2	0.9	45	53	37	1	"	-4841	beams lost
"	"	"	"	2.92	3.00	2200.74	"	2.0	1.5	36	50	34	0	"	-4840	beam lost
"	"	"	"	2.96	1.77	2202.51	"	1.6	1.5	38	50	20	0	"	-4841	beam lost.
"	"	"	"	3.01	7.86	2210.37	"	1.4	1.4	41	51	89	2	"	-4841	
"	"	"	"	2.69	8.30	2218.67	"	1.2	0.9	45	52	94	2	"	-4841	

RUN	DATE	START	STOP	AT RUN START I^+	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 $E>6GeV$	T_2 BIT 17 $2T \cdot E_4 \cdot \geq 2TR$

6:56 ID hard trip
funny thing! from 5 to 7 o'clock we had exactly every 5 minuts a 50% probability
for an ID trip! is it an RT-program at PKR, disturbing the beams every 5 minuts?

8 h Warming & Haidt on shift
Gas control done
9^{35} 5 minutes after run start beam lost
13^{34} Miss LAM B.2 C3 (TOF) JDAS 33 ×3

16^{00} Kawagoe + Schmidt on shift.
16^{20} gas check done
18^{00} missing LAM branch 4 crate 6 : ID Ring 2
23^{08} beams lost. ID trip.
There are problems with the magnet system → short break
23 54 beams
23 59 Foster + Ramcke Here. Gas check completed
6/5/85
00 03 I/D trip beam lost.
Short break announced again.
00 55 Beam back – switch on.
01 08 I/D trip beams lost.
01 41 JDAS error 33 LAM branch 4 crate 6 : ID(Ring 2).
04 15 TOF TDC NO HITS 22. ... wait for a while – seems OK on histogram
04 48 JDAS Error 33 Missing LAM branch 2 crate 3 TOF1 counters
" Error 33 " " 2 4 TOF2 "
04 59 JDAS Error 45 MP-16 analysis incomplete : YY=1.
TOF TDC NO HITS 60
JDAS Error 33 Missing LAM br.2 crate 3, TOF1
" " " br 4 crate 6 ID ring 2.
05:40 Beams dumped & start new fill.
06:15 Short break
07 00 Magnet to 5000A. Restart at 17^{00} Uhr

Processors ON/OFF N50	MIP	TOF	FAMP	<L> 10^{30} cm^{-2}s^{-1}	Bhabha $\int Ldt$ nb^{-1}	$\int Ldt$ exp, energy	IBM/Tape OUTPUT	At Run Start ID (μA)	TOF (V)	ONLINE REJ SUB MIPROC T_2 %	NORD 50 T_1 & T_2 %	Σ Bhabha	MH	E_{beam}	Mag. Field -kgauss	Remarks

8^{00} Cartwright, Kleinnort
8^{07} Gas check done
10^{35} Magnet → 6600 A , 11^{30} → 500 A RBg
Again 12^{20}–13^{00} Magnet 6600 A RBg
13^{30} J.C. Gkard replaces S. Cartwright on shift. Nothing's happening here.

16^{00} Kawagoe + Dietrich 16^{10} Gas check done
16^{50} Injection starts. Magnet → 7500 A.

18^{54} beams ready. run starts, under high background rates.
MUON crate missing.
17^{00} YSPY DETECTED ERROR ; Z-ch DL8S giving no response ; 2, 5
Z-ch V345 for these DL8S no response ; 1, 7
17^{05} YSPY DETECTED ERROR ; TOF TDC NO HITS ; 48
MUON DIGITISERS MISSING ; 135, 142, 143, 144, 146, 147, 149, 150, 152, 153
Z-ch V345 for these DL8S GIVE NO RESPONSE ; 1, 3, 5
17^{11} YSPY " " ; Z-ch " " " ; 1, 3, 5, 7
(Problems/Interference with Pulser-Test of Vertex chamber)

7/5/85 Foster & Elsen (on the graveyard again).
0:00 Gas check completed.
0:24. JDAS error 33 LAM br. 2 cr. 4 TOF2 counter
1:43 " " "
2:06 String of JDAS error 33 Beampipe chamber – PAUSE/CONTINUE OK.
" JDAS error 33 br 3 c. 2 Muon ch.
2:17. " " 53 system crate PARMS : 000002 140204
" " 33 br 1 cr 1 B.P.
33 br 4 cr 6 I.D. ring 2
33 br 2 cr 4 TOF2 counters
45 MP-16 analysis incomplete yy=1
"
16:40 Magnet read error : Mux channel not set. It should not care any more ... see p.98
06 00 μ crate missing – fixed.
Magnet read error : Mux channel not set again
0605 Beam dumped, at last, after 7 hours – delay caused by LINAC II problem.

RUN | DATE | START | STOP | AT RUN START I+ I- | DEAD TIME (%) | TIME (sec) | RECORDS IN | RECORDS OUT | ALL *10^6 | TØ REJ *10^6 | T1 Acc SUM | T2 Acc SUM | T1 Bit2 E>6GeV | T2 BIT 17 2T·E4≥2TR | Processors ON/OFF N50 MIP TOF FAMP | <L> | Bhabha ∫Ldt | ∫Ldt Exp, energy | IBM/Tape OUTPUT | At Run Start ID (μA) TOF (V) | ONLINE REJ MIPROC T2 % NORD-50 T1 & T2 % | Σ Bhabha | MH | Ebeam | Mag. Field | Remarks

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 $E_{16}>6$ GeV	T_2 BIT 17 $2T\cdot E_4\geq 2TR$
20624	6/5/85	3.19	4.09	4.44	4.23	12.7	3000	8001	3799	781	99	4385	6275	975	20
20625	"	4.10	5.02	3.98	3.79	12.0	3106	8002	3715	809	97	4396	6343	955	32
20626	"	5.03	5.40	3.56	3.43	13.3	2213	5619	2750	576	77	3170	4649	765	22
20627	"	18:55	19:23	4.37	5.26	40.9%	1687	8002	3225	439	179	1524	2550	338	11
20628	"	19^{24}	20^{16}	4.07	4.95	15.2	3059	8002	3787	796	121	3858	6464	869	30
20629	"	20^{17}	21^{10}	3.60	446	12.4	3182	8001	3791	828	102	4443	6438	909	32
20630	"	21:11	21:35	3.22	4.04	12.6	1381	3435	1613	359	45	1903	2727	378	12
20631	"	21^{36}	22^{35}	3.06	3.86	11.4	3517	8002	3701	915	105	4613	6327	965	22
20632	"	22^{36}	22^{56}	2.73	3.48	10.6	1196	2568	1089	311	33	1475	2115	290	7
20633	"	23:22	0 09	5.57	5.16	15.2	2840	8001	3805	739	113	4073	6343	939	29
20634	7/5/8	0.10	0.59	5.02	4.63	13.3	2969	8002	3750	772	103	4259	6299	970	18
20635	"	1.00	1:53	4.54	4.16	12.2	3148	8001	3805	819	100	4132	6355	967	31
20636	"	1:53	2:49	4.09	3.74	12.8	3307	8002	3599	860	110	4381	6498	1047	27
20637	"	2:49	3:51	3.69	3.38	11.4	3538	8002	3473	920	104	4529	6397	987	20
20638	"	3:51	4:23	3.31	3.03	10.8	1894	3948	1573	493	53	2273	3010	442	13
20639	"	4:28	5:36	3.12	2.85	9.9	4047	8001	3214	1053	103	4865	6152	982	20
20640	"	5:36	6.06	2.81	257	93	1744	3448	1355	454	42	2049	2629	372	11
20641	"	0631	0652	5.59	5.66	16.6	1196	3559	1738	311	52	1776	2802	446	16
20642	"	6:58	8:00	3.67	3.63	10.6	3680	8001	3513	957	101	4811	6102	1040	~~17~~ 19
20643	"	8^{01}	8^{28}	3.26	3.24	10.4	724	1661	694	188	20	967	1208	182	6
20644	"	9^{59}	10^{44}	6.27	5.87	18.9	2664	8001	4204	693	131	3943	6550	961	26
20645	"	10^{44}	11^{30}	5.57	5.19	15.8	2738	8002	3986	713	113	4102	6632	1024	35
20646	"	11^{30}	12^{10}	5.01	4.65	13.6		6605	3230			No	RUN	SUMMARY	
20647	"	12^{17}	13^{08}	4.54	4.21	11.3	3084	8001	3690	803	91	4431	6307	1103	14
20648	"	13^{09}	13^{52}	4.08	3.77	10.1	2420	6102	2690	623	63	3508	4587	758	30
20649	"	13^{58}	14^{14}	2.57	2.47	8.1	942	1991	866	245	20	1217	1473	251	1
20650							no data in this run					Z-chamber + Nord crash			
20651	"	18^{21}	19^{04}	5.89	6.14	19.5	2569	8002	4167	669	131	4026	6530	1095	42
20652		19^{04}	19^{51}	5.21	5.48	21.0	2756	8002	3969	717	150	4152	6615	1053	33
20653		19^{53}	20^{44}	4.62	4.88	14.1	3066	8002	3848	798	112	4541	6426	1172	42
20654		20^{45}	21^{40}	4.08	4.33	10.0	3272	8002	3640	852	185	4736	6052	1059	21
20655		21^{40}	22^{42}	3.61	3.85	9.9	3460	8002	3491	952	95	4971	5944	1103	23
20656		22^{42}	22^{47}	3.17	3.40	8.0	216	502	222	56	4	292	352	52	1
20657	8/5/8	0^{17}	1^{06}	6.01	6.05	11.7/	2924	8001	3952	760	88	4337	6237	1014	23

RUN	PROCESSORS ON/OFF N50	MIP	TOF	FAMP	⟨L⟩ 10^{30} cm^{-2}s^{-1}	∫Ldt nb^{-1}	∫Ldt Exp, energy	IBM/TAPE OUTPUT	AT RUN START ID [μA]	TOF [V]	ONLINE REJ. SUM MIPROC T_2 %	NORD-50 T_1&T_2 %	Σ Bhabha	MH	E_{beam}	MAG. FIELD	Remarks
20624	ON	ON	ON	ON	2.38	6.10	2224.77 (2218.67)	IBM	1.2	0.8	45	54	69	1	21.800	-4841	
20625	"	-	"	"	1.99	5.74	2230.51	"	1.1	1.1	46	55	55	2	"	-4841	
20626	"	"	"	"	1.62	3.89	2234.40	"	1.0	1.2	49	53	44	0	"	-4841	Beam Dumped
20627	"	"	"	OFF	1.7	2.86	2237.26	"	1.4	1.3	7	60%	30	0	"	-4850	this Run was influenced by Polar Test of [illegible].
20628	"	"	"	"	2.08	6.63	2243.89	"	1.2	1.2	46	53	75	1	"	-4850	
20629	"	"	"	OFF	1.82	5.39	2249.28	"	1.2	1.0	48	54	61	1	"	-4853	
20630	"	"	"	ON	1.55	1.94	2251.22	"	1.0	0.9	47	54	22	0	"	-4851	FAMP on
20631	"	"	"	"	1.33	5.65	2256.87	"	1.0	0.9	49	55	64	1	"	-4852	
20632	"	"	"	"	1.23	0.88	2257.75	"	0.8	0.75	52	59	10	0	"	-4850	beams dumped
20633	"	"	"	OFF	2.73	9.78	2267.73	"	1.5	1.5	41	54	113 (?)	7	"	-4853	
20634	"	"	"	OFF	2.31	5.83	2273.56	"	1.3	0.95	44	54	66	0	"	-4853	
20635	"	"	"	OFF	1.78	5.83	2279.39	"	1.2	0.8	43	54	66	2	"	-4853	
20636	"	"	"	OFF	1.43	4.74	2284.13	"	1.0	0.85	47	56	59	0	"	-4853	
20637	"	"	"	OFF	1.26	4.46	2288.59	"	1.0	0.9	49	58	48	2	"	-4853	
20638	"	"	"	OFF	1.06	2.01	2290.60	"	0.8	0.55	48	62	22	0	"	-4852	
20639	"	"	"	OFF	0.85	3.43	2294.03	"	0.75	0.50	52	61	45	0	21.802	-4853	
20640	"	"	"	OFF	0.71	1.24	2295.27	"	0.60	0.45	50	62	14	0	21.800	-4853	beams dumped at last after 7 hours!
20641	"	"	"	OFF	2.88	3.62	2298.89	"	1.45	2.0	41	53	41	0	"	-4852	110 Trip lost 0.5mA on each beam
20642	"	"	"	OFF	1.39	5.10	2303.99	"	1.308	1.3	51	57	67	1	21.811	-4852	
20643	"	"	"	OFF	1.17	1.06	2305.05	"	0.8	0.5	47	60	12	1	21.800	-4853	Stopped run because conditions intolerable – 1 Ahead trips. Then beams dumped. (8.40)
20644	"	"	"	OFF	3.06	6.89	2311.94	"	1.5	1.8	41	49	78	4	21.802	-4853	
20645	"	"	"	OFF	2.58	7.16	2319.10	"	1.4	1.5	44	51	81	0	21.800	-4856	
20646	"	"	"	OFF	2.56	5.57	2324.67	"	1.2	0.9					"	-4856	Nord hung up on levels 1,3,13,14 simultaneously
20647	"	"	"	OFF	1.85	5.30	2329.97	"	1.2	0.8	46	55	60	0	"	-4856	
20648	"	"	"	OFF	1.61	4.15	2334.12	"	1.0	0.7	47	57	47	1	21.802	-4857	run stopped due to bad background condition
20649	"	"	"	OFF	0.79	1.24	2335.36	"	0.6	0.4	51	58	14	0	21.800	-4858	Beams dumped
20650																	
20651	"	"	"	OFF	3.19	7.60	2342.96	"	1.4	1.4	42	49	86	3	"	-4843	
20652	-	-	-	OFF	2.28	5.92	2348.88	-	1.2	1.3	45	51	67	1	-	-4842	
20653	"	"	"	OFF	2.26	7.69	2356.57	"	1.0	0.9	49	53	87	2	-	-4842	
20654	"	-	-	OFF	2.17	7.24	2363.81	"	1.0	0.7	49	55	82	0	-	-4846	
20655	"	-	-	OFF	1.85	7.42	2371.23	-	0.8	0.5	52	57	84	1	-	-4844	
20656	"	-	-	OFF	1.59	0.18	2371.41	-	0.6	0.4	47	58	2	0	-	-4844	beams dumped
20657	"	"	"	"	4.18	12.37	2383.78	"	1.2	1.0	49	52	140	3	"	-4844	

RUN	DATE	START	STOP	AT RUN START I^+	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 $E_\gamma > 6$ GeV	T_2 BIT 17 2T· E_4 · ≥2TR

06:10 Magnet fluctuation.
06 55 J10 ~~[illegible]~~ trip

8^{00} Cartwright & Hagemann on shift

8^{10} ID hard trip. No loss of beam and TOF rate low, but chamber refuses to come back up.
Try again with more success.
8^{20} Exactly the same thing again, only ID was reset at 3rd rather than 2nd attempt.
8^{27} Another ID hard trip.
Mark J phone to say they will dump the beam in 5 minutes (they must have problems too!)
So stop run.
8^{47} Magnet fluctuation.
Beampipe chamber taken out of readout again (It came back in when I rebuilt the whole system).
8 26 Gas check done

10^{33} No TRIGGERS cured by pause/continue.
10^{34} " " " "
10^{49} " " " "
10^{54} JDAS error 45 — MP-16 analysis incomplete ; YY=1
11^{01} " " 33 — Missing LAM for 4 or 6 : ID ring 2
11^{44} JDAS error 45 — MP-16 analysis incomplete ; YY=1
11^{59} JDAS error 33 — Missing LAM for 2 or 4 : TOF2
12^{07} JDAS error 45 — MP-16 analysis incomplete : YY=1

13^{45} ID soft trip partial beam loss
13^{51} "
14^{14} "
14^{15} Beams dumped
14^{23} Asked MARK J about the status of PETRA: The machine shifts are cancelled and we will have luminosity this afternoon (17^{00}). Problems with injection.
14^{30} Run magnet current down to 500 A.

Processors ON/OFF N50	MIP	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 (μA)	TOF (V)	ONLINE REJ MIPROC T_2 %	NORD 50 T_1 & T_2 %	Σ Bhabha	MH	E_{beam}	Mag. Field	Remarks

16^{00} W. Bartel & T. Greenshaw (replacing I Duerdoth) ↖ arrived 19^{00} hrs.
'Restart ca 17.00'
17^{00} Run up magnet to 7500 Amps
18^{15} try to start Run 20650 immediately get readout error + message
Z-chamber HV alarm. Get Z-chamber up again with Susan's help.
Next Nord collapsed — reload
↳ colour TV stuck, but STOP worked, just like run 20539.
VTX-chamber in the read out pattern from run 20651 on. Do not know how to change read out pattern.
19^{30} missing hits. i.e. JDAS errors 33, 45
19^{40} No triggers — fixed by PAUSE/CONTINUE.
19^{50} For RUN 20653 READOUT PATTERN changed to 77737B. i.e. omit Vertex chamber
20^{00} Gas check done
22^{20} Std. histograms during run 20655 ok

8. 5. 85

0^{00} ~~Kate~~, Gibbs, Kawagoe

2^{18} YSPY ERR ; TOF TDC NO HITS ; 22, 60
2^{46} TRIGGER 2 output missing.

5^{15} " SYNCHROTRON DOWN AGAIN RESTART AS SOON AS POSSIBLE "
6^{15} Injection
6^{50} ~2 min after run start : HV WRONG YVOLTS : TAG — MFR 63 CHAN 0/1/10 HV = 0.003 SHOULD BE 1.336

Check voltages, all ok. Try reset MFR 63 CH 0 : "DOES NOT REQUIRE RESETTING"
Histograms TAGGING ENERGY LUMI ±Z, TAGG +Z empty. No Lumi (IL=0) but BIL = 8.39 and increases.
Several other histograms are empty too, like SYNRAD hits. (⟶ NOW OK 13:55)
S. Wagner not callable, cannot wake up Kawagoe who went home at 5^{15}.
Finally I found the instructions. MF 63 is on, voltage 0003, can not be increased.
Start new run, nevertheless.

8^{00} W. Bartel & F. Foster on shift
7^{55} Switch off HV lost part of the beam
8^{00} Synchrotron is down so we continue with what is left in the machine
8^{21} TAG now back up MFR 63 Lecroy restarted.

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 BIT 2 $E_{LG}>6$ GeV	T_2 BIT 17 2T·E_4 >2TR
20658	08/05/85	1:06	1:57	5.30	5.37	11.3	3043	8002	3852	792	89	4449	6306	702	27
20659	"	1:57	2:52	4.71	4.78	10.2	3268	8001	3760	850	86	4668	6071	1064	27
20660	"	2:53	3:50	4.17	4.24	9.4	3434	8001	3555	894	84	4796	5937	1087	22
20661	"	3:50	4:49	3.71	3.78	8.2	3475	8002	3509	981	80	4967	5910	1079	13
20662	"	4:49	5:11	3.31	3.38	6.0	915	2092	833	259	19	1226	1187	248	6
20663	"	6:37	7:33	5.93	5.64	11.5	3180	8002	3726	827	95	4178	6682	1036	31
20664	"	7:38	7:55	5.13	4.85	11.5	929	2367	1073	242	28	1321	1788	326	7
20665	"	8.02	8:52	2.01	2.46	6.4	2945	5165	1940	767	49	3289	3891	574	14
20666	"	10:01	10:28	3.91	5.17	8.9	1578	3448	1532	410	36	1929	2744	363	12
20667	"	11:13	11:48	6.15	6.18	13.6	2703	8002	3977	703	96	4293	6236	1044	26
20668	"	11:50	12:36	5.45	5.47	12.7	2788	8002	3987	725	92	4305	6451	1040	30
20669	"	12.46	13:39	4.75	4.76	10.3	3113	8002	3745	810	83	4523	6229	1057	28
20670	"	13:40	14:37	4.22	4.23	9.4	3395	8001	3597	884	84	4765	6042	1076	28
20671	"	14:37	15:37	3.76	3.77	8.5	3595	8002	3397	936	80	4938	5861	1090	26
20672	"	15:38	15:51	3.37	3.38	8.9	760	1673	668	188	18	1055	1115	227	1
20673	"	17:16	18,01	6.53	6.59	17.6	2636	8001	4140	686	120	4022	6570	1035	25
20674	"	18:01	18:09	5,78	5,84	22.9	413	1223	675	107	24.5	590	1057	161	1
20675	"	18:44	19:28	6,51	6,49	28.1	2583	8002	4486	672	189	3770	7076	1030	33
20676	"	19:28	19:48	5.76	5.86	34.1	1144	3541	2035	298	101	1677	3157	489	14
20677	"	20:31	21:15	6.62	6.47	31.6	2575	8002	4429	670	212	3731	7089	1071	43
20678	"	21:16	22:07	5.82	5.87	21.8	2591	8001	4335	674	147	3967	7000	1111	26
20679	"	22:07	22:42	5.04	4.31	17.7	1836	4799	2347	478	84	2628	3872	699	18
20680															
20681	no	events													
20682															
20683	08/05/85	23:02	24:00	4.50	3.82	9.8 ~~3425~~	3425	8002	3460	891	87	4797	6197	1166	28
20684	9/5/85	0:00	1:02	4.04	3.39	9.5	3638	8002	3372	948	90	4975	5960	1171	24
20685	"	1:03	1:40	3.63	3.02	8.9	2136	4604	2053	556	49	2842	3282	624	13
20686	"	3:03	3:37	—	—	—	—	491	177	—	COSMICS				
20687	"	3:38	4:01	—	—	—	—	291	91	—					
20688	"	4:33	5:20	6.54	6.58	17.9	2626	8001	3956	684	122	3853	6237	949	16
20689	"	5:20	6:01	5.69	4.59	13.4	2462	7126	3324	640	86	3688	5479	881	30
20690	"	10.52	11.47	5.49	5.11	11.4	3109	8002	3836	809	92	4356	6634	1005	27
20691	"	11.54	12.9	4.84	4.44	11.8	3191	8002	3675	831	98	4440	6568	1089	29

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 MIPROC T_2 %	ONLINE REJ NORD50 T_1 & T_2 %	Σ_{Bhabha}	MH	E_{beam}	Mag. Field −1.6 gauss	Remarks
ON	ON	ON	OFF	3.28	8.57	2392.35	IBM	1.1	0.7	46	53	97	5	21.800	-4846	
"	"	"	"	2.68	9.01	2401.36	"	1.0	0.6	48	54	102	4	"	-4844	
"	"	"	"	2.14	6.36	2407.72	"	0.8	0.5	49	57	72	2	"	-4845	
"	"	"	"	1.62	5.74	2413.46	"	0.7	0.42	52	59	65	1	"	-4847	
"	"	"	"	1.31	0.77	2414.23	"	0.6	0.38	45	61	11	2	"	-4847	beams dumped
"	"	"	"	?	12.72	2427.15	"	1.2	1.5	56	55	144	3	"	-3851	TAF PROBLEM!
"	"	"	"	?	2.56	2429.61	"	1.0	0.6	45	56	23	0	"	-4845	
"	"	"	"	0.38	1.94	2431.55	"	<1	<0.5	55	64	22	2		4846	
"	"	"	"	2.33	4.15	2434.60	"	1.0	0.8	48	57	47	0	"	4846	beams dumped
"	"	"	"	4.07	10.25	2444.85	"	1.2	1.7	44	51	116	2	"	4847	
"	"	"	"	3.34	9.32	2454.17	"	?	?	46	51	134	2	"	4847	
"	"	"	"	2.56	7.97	2462.14	"	1.0	0.6	47	54	108	0	"	4849	
"	"	"	"	1.91	7.51	2469.65	"	0.9	0.5	49	56	85	0	"	4850	
"	"	"	"	1.49	5.21	2474.86	"	0.8	0.4	51	59	59	4	"	4850	
"	"	"	"	1.16	1.50	2476.36	"	0.7	0.4	52	62	17	0	"	4850	
"	"	"	"	4.28	10.78	2487.14	"	1.2	0.86	43	49	122	5	"	4851	
"	"	"	"	3.49	1.86	2489.0	"	1.2	0.8	44	46	27	0	"	4850	beams lost
"	"	"	"	3.80	9.54	2498.54	"	1.35	1.0	43	46	108	0	"	4850	
"	"	"	"	3.00	4.57	2503.13	"	1.3	0.9	44	44	52	4	"	4850	beams lost
"	"	"	"	3.78	8.66	2511.79	"	1.4	1.5	43	46	98	3	"	4850	
"	"	"	"	2.42	7.57	2519.30	"	1.2	0.8	45	47	85	2	"	4846	
"	"	"	"	1.97	4.57	2523.87	"	1.0	0.6	47	52	57	3	"	4846	
								0.85	0.5							
																NORD reloaded
"	"	"	"	1.72	6.10	2529.91	"	0.85	0.5	51	58	69	0	21.800	4845	
"	"	"	"	1.31	6.80	2536.71	"	0.75	0.45	52 ~~69~~	59	77	2	"	4844	
"	"	"	"	1.11	2.65	2539.36	"	0.65	0.4	50	57	30	0	"	4846	beams dumped
						—	IBM			51	67	—	—		4847	
						—	"					—	—			COSMICS
								/		48	73				4844	
"	"	"	OFF	2.43	7.95	2547.31	"	1.0	1.5	39	52	90	2	21.800	4846	
"	"	"	"	2.10	5.12	2552.43	"	0.75	0.9	43	55	58	2	"	4844	beams dumped
"	"	"	"	2.83	8.95	2561.38	"	1.2	1.4	48	53	99	1	"	"	
"	"	"	"	2.18	8.75	2570.13	"	? 0.9	? 0.8	49	55	99	3	"	−4846	

RUN	DATE	START	STOP	AT RUN START I^+	I^-	DEAD TIME (%)	TIME (sec)	RECORDS IN	RECORDS OUT	ALL $*10^6$	$T\emptyset$ REJ $*10^6$	T_1 ACC SUM	T_2 ACC SUM	T_1 Bit 2 $E_{LG} \geq 6GeV$	T_2 BIT 17 $2T \cdot E_4 \cdot \geq 2TR$

Processors ON/OFF N50	MIP	TOF	FAMP	$\langle L \rangle$ 10^{30}	Bhabha $\int Ldt$ nb^{-1}	$\int_{EXP, energy} Ldt$	IBM/Tape OUTPUT	At Run Start ID (μA)	TOF (V)	ONLINE REJ MIPROC T_2 %	NORD 50 T_1 & T_2 %	Σ Bhabha	MH	E_{beam}	Mag. Field	Remarks

08 24 Trig 1/2 outputs missing – low rate? seem OK on histograms,
JDAS error 33 br 4 cr 6 ID ring 2.

08 32 Vertex chamber trip. – expert was there – trying to ramp up H.T.!

08 ~~45~~52 Hard trip End run.
Lumi so low we decide not to run. Synchrotron now repaired.

10:30 IBM - down IBM - Error 53 call 758 They will investigate the fault

10 58 Beam return

11:48 YPAROT rebuilt – it had been giving error messages on the system console (OUTSIDE SEGMENT BOUNDS) since yesterday evening. Works now. HEP

12:00 gas check done

13:22 TOF TDC No hits : 11 histogram OK.
YVOLTS complains that it can not read LG.-voltages.
wait for Kawagoe to take care of the fault. LG-system seems to be ok

15:00 PKR complains that our lumi is low by 40 ÷ 60% compared to the other experiments especially TASSO, where the instantaneous difference is 60% (integrated lumi over 15^h).
JADE consistency checks: a) tagging lumi is consistently ~10% lower than Barrel-Bhabhas
b) Hadronic x-section
$\sigma = 0.2$ nb
100 nb^{-1} ⇒ expect 20 hadrons
see 26±5 "
assuming that rad cor and background cancel the rate is consistent with ~~what~~ our lumi

we measure (more statistics) 658.6 nb^{-1} 158 mhad ⇒ $\sigma = 0.24$
compare to previous measurement at 22.1 GeV: 675.3 nb^{-1} 193 mhad = $\sigma = 0.28$
i.e. 0.24 of measured in this period should be compared to 0.28 of the previous period. Both numbers are consistent and do not hint to a grossly wrong lumi measurement.

16^{00} Hellenbrand & Chris on shift.
16^{05} gas check done.
17^{15} Start Run 20673 with non-standard readout 077737 (i.e. without vertex chamber).
17^{16} HU Read Error (dead glass). This error should be cured now.
Error occured because the power was off in the lowest crate of Rack 20. due to a fan failure. The fan unit was changed by Naroska + Riesebog. given a hint by Olsson.

21: 16 Jdas error 33 – Missing data br. 4 cr. 6 : ID Ring 2.
21: 28 ID & Z-chamber hard trip.
very bad beam conditions during the whole shift. We complained several times at PKR and asked for optimization. They were willing but died not succeed.

22:25 JDAS READ OUT ERROR 53 – system crate watchdog flag PARMS = 000202 140204 (oct)
" " " " 50 – CAMAC crate offline in branch 3 ← at least 10 times
JDAS READ OUT ERROR 53 – watchdog flag PARMS = 000000 140204
PAUSE/CONTINUE helped PARMS = 000012 140204
22:35 JDAS READ OUT ERROR 33 – Missing LAM branch 3 crate 2 : Muon Chambers frequently
22:42 ERROR 52 controlward 001644
on line printer : ERROR 37: IOX ERROR, Address 121417, Level 8
stopped RUN 20679
tried to start next RUN's 20680, 20681, 20682 always stopped after second calibration event.
EXIT and reloaded NORD instructed by Howard Mills
reloaded MIPROC + A99
than started RUN 20683

23^{15} 4/XSRY Detected error TOF TDC No hits 32
23^{42} - No trigger : Pause/Contine . o.key.

9.5.85

0^{00} Kado und Warming on shift

0:10 Gas check done
2:20 Camac crate br 3 cr 2 (muon filter) tripped with overload, power pack replaced
3:40 Fuse blown in new power pack; fuse replaced, again overload-trip
4:10 fan unit replaced in this crate, } camac interface unit # 8 replaced by a spare one again overload trips
↳ no more trips until end of shift

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 $\times 10^6$	T_1 ACC SUM	T_2 ACC SUM	T_1 BIT 2 E ≥ 6 GeV	T_2 BIT 17 2T · E_4 · ≥ 2TR

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9/5/85

8⁰⁰ Kawagoe and Haidt on shift

8¹⁰ Gas Check done.

10⁴⁵ magnet run up

11³³ JETCH failed

12⁰⁹ IBM transfer error

12¹⁹ JDAS Read out error 33 - missing LAM branch 4 crate 6 : ID ring 2

15¹⁸ Beam ready Runstart.

15²⁰ JC soft Trip — beam optimization

TOF rate more than 80 cannot switch on I.D: ask R.K.R

Gas check done 15:55 ~~HH~~

16⁰⁰ F. Foster & G. Kukes on shift

16 31 IBM Bury error message - clears almost immediately. Error 54 Run # 20694⁵ [G. knee on 3234]

18 00 JDAS Error 46 - MP-16 out of sequence YY=1

Vertex chamber now up to 1300V.

JDAS Error 33 missing LAM br 4 cr 6 ID ring 2.

(Problem with Gould INTLK red button flashes. — paper was separated — Now O.K.)

TOF TOC. No hit 11 (low rate?).

JDAS Error 45 - MP-16 analyzer overwrite : YY=1

JDAS " 33 br 3 cr 2 Muon Chambers.

21:22 JDAS " 33 br 4 cr 6 ID Ring 2

22:10 JDAS readout error 46 MP-16 out of sequence; YY=1

22:38 JDAS Error 33 br 3 cr 2 Muon Chambers

23:06 br 4 cr 6 ID ring 2

10.5.85

0⁰⁰ H. Kado and H. Riesberg on shift.

SHORT BREAK

Integrated luminosity midnight to midnight see page 190 : Mean of the last 7 days is 123 nb⁻¹/day

0¹⁸ Gas check done

0²⁵ Magnet to 2000A since people are working on a cherry

Note: Runs # 20702 and 20703 have - unnoticed by the shift crew - a very high number of ID illegal hits and illegal wire numbers. This time not only the Brown DLB # 31 is affected. general readout problem? Run 20704 is good again

Processors ON/OFF N50	MIP	TOF	FAMP	<L> 10^{30} cm⁻²sec⁻¹	Bhabha $\int Ldt$ nb⁻¹	$\int Ldt$ EXP. energy	IBM/ Tape OUTPUT	At Run Start ID (μA)	At Run Start TOF (V)	ONLINE REJ MIPACC T_2 %	ONLINE REJ NORD SQ T_1 & T_2 %	Σ_{Bhabha}	MH	E_{beam}	Mag. Field -i-ground	Remarks

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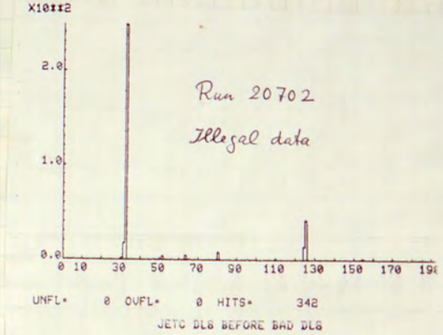
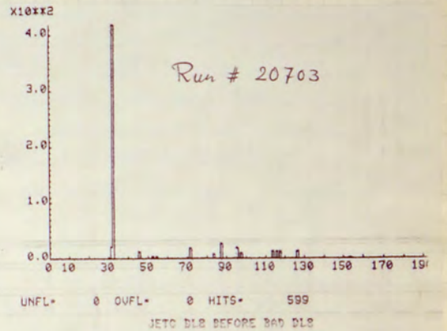
Display problem : Histogram 26 (Jet Anode Current) and histogram 27 (Jet Chamb Current) are missing in all old runs, also in the one (run # 20695) where they were present in the standard histograms.

EXIT, start up → ok

1²⁰ Magnet → 7500 A





2²⁰ New fill ready, high background, beam lost

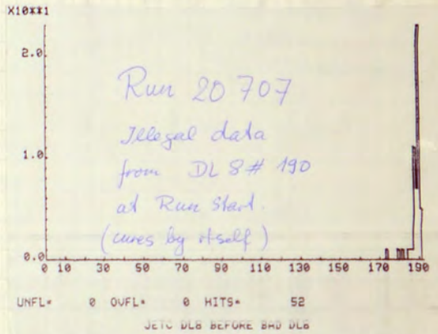
3³⁰ New fill ready. Run 20706 started

4²⁰ 2mA per beam lost, beams dumped

5⁰⁵ New fill ready. Run 20708 started.

VTXC at 1325 V now

7⁴⁵ beam unstable. Several slow trips by TOF rate-alarm



8⁰⁰ Bathke a Chiu on shift.

8¹⁵ Gas Check Done

→ Jdas Readout Error 33 - Missing dam branch 2 crate 3 : TOF1 counters.

8³⁰ ~~Error~~ spotted in muon histograms while scanning standard histograms.

4 dead chambers due to ADC failure. This has been present for the past 2 shifts.

Muon expert should preferably been called out for this. Bug in YSPY caused it not to find hole (now fixed).

Dead digitizer now replaced.

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 $\times 10^6$	T_1 ACC SUM	T_2 ACC SUM	T_1 Bit 2 $E_{LG} > 6$ GeV	T_2 BIT 17 2T. $E_4 > 2$ TR
~~20691~~	~~9/5/85~~	~~11 54~~	~~12 52~~	~~4.84~~	~~4.46~~	~~11.8~~	~~3191~~	~~8002~~	~~3875~~	~~831~~	~~98~~	~~4660~~	~~6568~~	~~1089~~	~~27~~
20692	"	12^{52}	13^{47}	4.31	3.90	10.2	3264	8002	3590	849	86	4479	6531	1033	25
20693	"	13^{48}	14^{09}	3.89	3.51	10.0	1274	3128	1399	331	33	1806	2467	414	12
20694	"	15 19	16:09	6.33	6.55	25.4	2523	8001	4621	656	167	4038	6860	1037	37
20695	"	16:18	17:04	5.42	5.66	20.1	2488	8001	4302	648	130	4196	6921	1075	29
20696	"	17:04	17:51	4.83	5.05	13.5	2737	8001	3986	713	97	4327	6892	1081	17
20697	"	17:52	18 43	4.30	4.45	11.8	3046	8001	3776	792	94	4568	6733	1170	19
20698	"	18.44	19.16	3.84	3.88	10.9	1894	4755	2182	493	54	2790	3855	685	20
20699	"														
20700	"	20^{18}	21^{02}	6.10	6.18	36.1	2577	8002	4536	671	242	3706	7518	1149	46
20701	"	21^{02}	21^{44}	5.35	5.47	24.8	2492	8001	4346	648	~~661~~ 161	4029	7190	1154	32
20702	"	21 46	22^{28}	4.80	4.94	16.5	2583	8001	4037	671	110	4161	6849	1133	27
20703	"	22^{28}	23^{14}	4.36	4.50	13.6	2751	8002	3985	715	97	4348	6576	1135	26
20704	"	23^{14}	23^{49}	3.93	4.08	12.1	2034	5314	2476	529	64	3002	4548	798	25
20705	10.5.85	2:30	2:35	5.91	6.08	85.7	78	271	219	20	17	27	250	5	0
20706	"	3:35	4:19	6.32	5.54	27.6	2669	8002	4392	694	191	3828	7375	1026	39
20707	"	4:20	4:27	5.68	4.97	36.8	76	120	63	4	2	41	28	8	0
20708	"	5:10	5:55	5.75	5.16	22.7	2650	8002	4340	689	156	3914	7136	1049	41
20709	"	5:55	6:39	5.75	5.23	78.0	2677	8002	4139	687	123	4153	7148	1778	33
20710	"	6:40	7:26	4.65	4.74	15.7	2767	8002	4069	720	108	4214	7059	1122	34
20711	"	7:27	8:23	4.18	4.26	13.4	2932	8001	3954	763	102	4324	6917	1140	30
20712	"	8:23	8:32	3.71	3.31	11.7	450	1277	630	117	14	722	994	185	5
20713	"	9:58	10:51	5.41	5.80	19.9	2557	8001	4268	666	133	4146	6820	1113	32
20714	"	10:51	11:44	4,73	5,11	14,5	2702	8002	4094	704	102	4271	6642	1174	32
20715	"	11:44	12^{34}	4,15	4,52	12.6	2931	8002	3732	762	96	4396	6614	1110	27
20716	"	12^{37}	13 30	3.67	4,02	11.1	3068	7404	3597	798	89	4477	6381	1133	17
20717	"	14^{10}	14:54	5,95	6,06	23.1	2542	8002	4177	662	153	3905	7068	1110	36
20718	"	14 53	15^{36}	5,34	5,44	20.8									
20719	"	15 45	16^{26}	4,73	4,82	17.6	2462	8001	4161	641	113	4378	6440	1099	34
20720	"	16^{27}	17^{12}	4.31	4.40	14.2	2683	8002	4091	698	99	4578	6270	1088	16
20721	"	17^{12}	17 31	3.80	3.99	12.4	1083	3133	1500	282	35	1821	2945	489	12
20723	"	19 24	19 39	5.73	5.69	20.0	905	~~2815~~	~~4576~~ 4576	235	47	1478	2498	425	12
20724	"	19 51	20:26	5.35	5.31	19.7	2062	6484	3417	537	106	3311	5575	903	34
20725	"	20:42	21:28	4.72	4.69	16.9	2772	8001	4056	721	121	4384	3917	1171	36

Processors ON/OFF N50	MIP	TOF	FAMP	$\langle L \rangle$ 10^{30} cm^{-2}s^{-1}	$\int L\,dt$ 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-SC T_1 & T_2 %	Σ Bhabha	MH	E_{beam}	Mag. Field -1=ground	Remarks
~~ON~~	~~ON~~	~~ON~~	~~OFF~~	~~2.18~~	~~8.75~~	~~2570.13~~	~~IBM~~	~~0.9~~	~~0.8~~							See previous page.
"	"	"	OFF	1.75	5.70	2575.83	"	0.9	0.8	49	56	62	2	21.800	-4.844	
"	"	"	"	1.43	1.82	2577.65	"	"	"	50	57	22	1	"	"	beam lost
"	"	"	"	3.29	9.72	2587.37	"	1.6	1.8	46	43	110	2	"	4850	
"	"	"	"	2.76	7.33	2594.70	"	1.1	1.2	48	47	83	2	"	4850	
"	"	"	"	2.49	6.18	2600.88	"	1.0	1.1	50	51	70	0	"	4850	
"	"	"	"	1.93	5.48	2606.36	"	0.9	1.0	52	56	62	2	"	4850	~~Run not good to go~~
"	"	"	"	1.52	3.60	2609.36	"	0.8	0.8	52	55	34	0	"	4850	
"	"	"	OFF	2.63	6.63	2615.99	"	~~1.4~~ 1.8	1.8	46	44	75	0	"	"	
"	"	"	"	2.20	6.01	2622.00	"	1.2	1.6	48	47	68	2	"	"	
"	"	"	"	1.65	5.21	2627.12	"	1.1	1.5	48	51	59	1	"	"	
"	"	"	"	1.74	4.15	2627.27	"	1.0	1.2	48	51	47	3	"	4887	
"	"	"	"	1.59	2.03	2629.30	"	0.8	1.0	52	55	23	1	"	"	
"	"	"	"	0.77	0	2629.30	"	3	3	52	21	0	0	"	4841	beam lost
"	"	"	"	2.50	6.80	2636.10	"	1.5	3.0	47	46	77	2	21802	4842	
"	"	"	"	2.32	0.19	2636.28	"	-	-	?	55	2	0	21800	"	Beams dumped
"	"	"	"	2.64	6.36	2642.64	"	1.3	2.0	48	47	72	5	21.800	4840	
"	"	"	"	2.25	6.63	2649.27	"	1.2	1.6	50	49	75	5	"	"	
"	"	"	"	1.94	5.21	2654.48	"	1.0	1.3	50	50	59	3	21.802	"	
"	"	"	"	1.26	4.42	2658.90	"	0.9	1.3	51	52	50	1	"	"	
"	"	"	"	1.13	0.71	2659.61	"	0.9	1.1	49	52	8	0	"	"	beams dumped.
"	"	"	"	3.04	8,48	2668.09	"	1,6	1.9	46	48	96	2	"	4841	
"	"	"	"	2.62	7,16	2675.25	"	1,2	1,2	47	50	81	0	"	4840	
"	"	"	"	2.08	4,95	2680.20	"	1,1	1,1	49	54	56	1	21,800	4844	
"	"	"	"	1.68	5,48	2685.68	"	1,0	0,8	50	56	62	1	"	4844	beams dumped.
"	"	"	"	3.06	7,78	2693.76	"	1.4	1.9	46	49	89	3	"	4844	
"	"	"	"	2,34	5,39	2699.15	"	1,3	1,6		46			"		Run Summary lost see p142
"	"	"	"	1.97	5.65	2704.80	"	1.2	1,3	47	49	64	3	"	4844	
"	"	"	"	1.88	4.77	2709.57	"	1.1	1.2	49	50	54	5	"	-4846	
"	"	"	"	1.80	1.59	2711.16	"	1.0	1.1	49	53	18	2	"	"	
"	"	"	"	3.71	2.56	2713.72	"	1.3	~~1.8~~ 1.8	47	47	29	1	"	-4846	Run 20723 Summary lost
"	"	"	"	3.13	6.71	2720.43	"	1.0	1.3	46	48	76	1	"	4844	
"	"	"	"	2.51	5.39	2725.82	"	0.9	1.2	49	50	61	3	"	4844	

10:35 start flicking of Detector-status lamps (acc. alarm). than: no events, readout error 52, cw 240
LG HV fail? BP chn HV fail?
found output current LG Barrel 4 too low. Cannot reach Kawagoe.
Pause/Continue helps to run for some minutes, but same story starts again.
Proceed with Pause/Stop in order to continue datataking until some expert will come.
Hitmaps Barrel 1/2 look as always.

10:52 Now these errors come frequently. S.K. will come as "old" expert.
LG Barrel 4 output current no ok.
11:00 LG HV error. Barrel 4 had overcurrent.
Only sometimes! ~~OK~~ Switch off/on HV Barrel 4 → ok for sometime.
After next fault: current again too low.
Sachio says he can perhaps do something ~~to~~ after this fill...

12:07 Missing Lam br 4 cr 6 : ID Ring 2.
14:35 Missing LAM br 2 cr 4 : TOF2
15:00 LG-HV errors cured themselves, just before Kawagoe came in.

The reason of LG-HV errors is not clear. Sachio and I think that it is ~~de~~ probably due to some bad PMT. But we can do nothing now.

To the shift crew; if HV ~~errors~~ errors occurs again, switch OFF/ON HV barrel 4. and continue the run.

if it doesn't help, it's a nice chance to find the bad PMT.
K. Kawagoe.

15:25 Jdas Readout Error 33 - Missing Lam br 4 cr 6 : ID Ring 2.
15:26 " " " " " " " " "
15:26 End of Run 20718 ; No Summary Available - due to corrupt system - Nord reloaded
(Thankfully Howard was here at the time!).

16.00 Matsumura & Weber on shift
16.20 gas check done
16.42 JDAS READOUT ERROR 45 - MP16 analysis incomplete; YY=1
18.28 Petersen and Hagemann can be called at ~~x~~3139 in case of vertex chamber gas alarm; they are flushing the chamber with a new mix of gas and think it might develop overpressure during the next 2 hours; in case of gas alarm at a later time, one should call Rancke by Euro-beep
19.15 After refill NORD 10 hang-up; call H. Mills to be told to reload; start run 20721
19:39 IBM Link down stopped run
20:26 " " " .
23:55 Le Croy MFR 63 down, manual HV ON
23.59 Error message: HV crate TAG 63 off. Go to other side of detector and reset it manually; seems o.k. now, but one should keep an eye on it!
1985 May 11 Duerdoth Spitzer.
00:10 Missing LAM, Br 4 Cr 6. & JDAS ERROR 46
5:15 "ILLEGAL JETC DATA". Rubber DL8 191, 190 does not help.
LG trip - switch HV barrel 4 OFF/ON (several times) - stays on for only a few minutes
4:55 Restart NORD - couldn't start run, no lights flashing, (Level 9).
6:20 LG trip, JDAS ERROR 52 HV barrel 4 OFF/ON fixes it
8:00 Hellenbrand, Skard
8:27 JDAS readout error 33 - Missing LAM branch 2 cr. 3 : TOF1 counters
8:45 - 9:00 Lots of LG trips. HV barrel 4 OFF/ON helps momentarily, but then it trips again. Kawagoe unreachable...
9:15 Kawagoe on his way, after more trips...
9:40 ~~[illegible]~~ JDAS readout error 33 - Missing LAM br 2 cr 3 : TOF1 counters
9:43 JDAS readout error 45 - MP-16 analysis incomplete; YY=1

RUN 20739 LG RING ~~24~~ 22 - 1~21 missing (for test) (K.K.)

RUN 20740 } LG Ring ~~24~~ 22 - blocks ~~22-42~~ 63-84 pulled out
RUN 20741 } 1-21 in again
RUN 20740 stopped because of ILLEGAL JETC DATA

RUN 20741 ~~In~~ most of the RUN has ILLEGAL JETC DATA (DL8 #191)
problem cured by touch~~ed~~ing DL8
then IBM broke down → RUN stopped
but we are lucky, because PETRA lost the beams

Runs 20740 and -41 have Mixpre T2 rejection rates of 8% and 6%, versus normally ~48%. [????] ← Due to the faulty DL8! If errors in data you don't want to reject events where data unreliable

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 $E_{LG}>6$ GeV	T_2 Bit 17 2T·$E_4\geq$ 2TR
20726	10. 5. 85	21:29	22:18	4.24	4.21	12.7	2937	8002	3988	765	97	4486	6590	1211	27
20727	"	22 55	22 57	6.12	6.19	26.8	97	370	212	25	7	161	293	38	0
20728	"	23 52	0:43	6.32	5.86	22.7	2537	8002	4360	661	149	3884	7185	1132	38
20729	11.5.85	0:43	1:26	5.56	5.14	19.0	2533	8001	4240	659	125	4068	7109	1168	40
20730	"	1:26	2:07	5.00	4.62	15.8	2411	7318	3708	627	99	3702	6133	1025	29
20731	"	3:20	4:04	6.49	6.62	37.3	2608	8001	4512	678	253	3529	6948	1001	46
20732-33	No data	LG error													
20734	"	5:03	5:49	4.78	4.52	2726	2726	8002	4038	705	108	~~6582~~ 4107	~~[illegible]~~ 6989	1096	42
20735	"	5:49	6:41	4.25	4.05	11.8	2900	8002	3812	759	85	4451	6470	1160	27
20736	"	6:42	7:01	3.84	3.62	10.9	1147	3073	1461	298	32	1725	2525	423	9
20737	"	8:17	9:26	6.12	6.10	23.4	2551	8001	4366	664	155	3882	7117	1040	32
20738	"	9:27	9:51	5.06	4.93	20.2	1313	4040	2226	342	69	2182	3381	563	16
20739	"	10:00	10:37	4.66	4.55	14.5	2075	6386	3397	540	78	3582	5063	865	15
20740	"	10:43	10:53	4.22	4.11	33.9	565	1739	783	147	50	762	1002	158	9
20741	"	10:54	11:02	4.12	4.02	29.9	433	1435	644	112	34	664	770	115	8
20742	"	12:55	13:13	5.14	5.66	18.3	1027	3377	1873	267	49	1775	2782	422	29
20743	"	13:19	14:57	4.81	5.34	14.4	2856	8002	4047	743	107	4226	6926	1130	21
20744	"	15:00	15:03	3.78	4.28	12.1	189	534	276	49	6	286	403	66	2
20745	"	16:03	16:44	5.67	6.17	22.6	2435	8002	4426	633	143	4175	6813	983	44
20746	"	16:44	17:30	5.04	5.84	22.0	2445	8002	4447	638	140	4337	6364	1062	31
20747	"	17:30	18:01	4.47	4.99	16.4	1815	5359	2720	472	77	2764	4549	758	24
20748	"	18:40	19:39	3.80	4.16	11.3	3031	8001	3888	788	89	4626	6531	1214	45
20749	"	19:40	19:40	3.34	3.67	10.9	19	77	38						
20750	"	20:36	21:25	5.76	6.03	21.1	2527	8001	4345	657	138	4071	7026	1136	32
20751	"	20:25	21:36	5.04	5.14	16.3	419	1289	692	104	17	696	1043	186	6
20752	"	22:03	22:08	6.13	6.18	22.4	224	846	573	58	13	392	713	92	2
20753	"	22:49	23:32	6.16	6.20	21.5	2311	8002	4731	601	129	4151	6836	1028	31
20754	"	23:33	0.26	5.47	5.45	15.5	2529	8002	4353	658	102	4200	6962	1116	32
20755	12.5.85	0:27	1:15	4.68	4.05	11.9	2866	8002	4068	746	88	4395	6883	1153	31
20756	"	1:16	2:02	4.22	3.64	10.5	2779	7190	3455	722	76	4071	6023	1029	33
20757	"	2:36	3:16	6.10	6.56	21.9	2373	8001	4603	617	135	3994	6988	1131	34
20758	"	3:16	3:58	5.44	5.86	22.6	2345	8001	4569	611	138	4069	6879	1167	42
20759	"	3:56	4:38	4.88	5.28	15.4	2477	8002	4419	645	100	4240	6884	1152	35
20760	"	4:38	4:46	4.39	4.76	13.6	414	1299	695	108	15	670	1119	184	4

RUN	Processors ON/OFF N50	MIP	TOF	FAMP	<L> 10^{30} cm^{-2} sec^{-1}	∫Ldt nb⁻¹	∫Ldt Exp, energy 2725.82	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
20726	ON	ON	ON	OFF	2.00	6.63	2732.45	IBM	0.8	1.1	50	51	75	1	21.802	4844	
20727	"	"	"	"	0	0.35	2732.80	"	1.4	2.0	36	45	4	0	"	4841	beams lost
20728	"	"	"	"	3.17	8.83	2741.63	"	1.3	2.0	46	47	100	4	"	4842	
20729	"	"	"	"	3.08	8.83	2750.46	"	1.2	1.5	48	48	100	4	"	4841	
20730	"	"	"	"	2.78	6.80	2757.20	"	1.1	1.3	48	50	77	2	"	4841	beams dumped
20731	"	"	"	"	3.62	9.36	2766.56	"	1.5	2.1	39	45	106	4	"	4841	
20732-33																	
20734	"	"	"	"	2.60	7.42	2773.98	"			47	51	84	3	"	4843	
20735	"	"	"	"	2.79	8.48	2782.46	"	1.0	1.0	48	53	96	0	"	4842	
20736	"	"	"	"	1.37	2.12	2784.58	"	0.9	0.9	48	54	24	0	"	4840	
20737	ON	ON	ON	OFF	3.73	9.19	2793.77	"	1.6	1.9	45	46	104	3	"	4841	
20738	"	"	"	"	2.90	4.42	2798.19	"	1.2	1.2	48	46	50	0	"	4841	
20739	"	"	"	"	2.77	5.04	2803.23	"			48	48	57	0	"	4842	LG ring ~~22~~, 1-21 off.
20740	"	"	"	"	1.80	0.88	2804.11	"	1.0	1.0	8	57	6	0	21802	4844	LG ring ~~22~~, ~~22-42~~ 63-84 off
20741	"	"	"	"	1.81	0.62	2804.73	"			6	57	7	1	21800	4843	Mark ILL. SOTC DATA IBM [illegible] Beams lost
20742	on	on	on	off	3.19	3.71	2808.44	IBM	1.3	1.75	46	46	42	1	21.800	4846	LG ring-23 1-21 off and soon.
20743	"	"	"	"	2.57	7.86	2816.30	"	1.2	1.45	49	51	89	5	"	4844	
20744	"	"	"	"	2.21	0.27	2816.57	"	1.1	1.4	44	50	3	0	"	4846	beams lost. Z-CH OFF ↓
20745	"	"	"	"	3.70	8.57	2825.14	"	1.4	2.1	47	46	97	2	"	4847	
20746	"	"	"	"	3.00	9.01	2834.15	"	1.2	1.6	45	45	102	1	"	"	
20747	"	"	"	"	2.65	4.86	2839.01	"	1.0	1.3	45	52	55	0	"	4847	Stopped to work on DL8
20748	"	"	"	"	1.81	5.21	2844.23	"	0.9	1.1	51	52	59	1	"	4846	
20749					0.02	0.09	2844.32	"					1	0	"	4847	beams dumped
20750	"	"	"	"	3.63	8.84	2853.16	"	1.3	1.9	47	47	100	4	"	4845	
20751	"	"	"	"	2.20	1.06	2854.22	"	1.2	1.5	47	48	12	0	"	4836	beams dumped after partial loss
20752	"	"	"		4.80	0.97	2855.19	"	1.4	2.0	42	34	"	0	"	4836	beams lost
20753	"	"	"	"	4.02	9.89	2865.08	"	1.4	2.1	47	42	112	4	"	4835	
20754	"	"	"	"	2.94	8.22	2873.30	"	1.2	1.6	48	47	93	2	"	4834	
20755	"	"	"	"	2.07	6.89	2880.19	"	1.0	1.2	50	50	78	1	"	"	
20756	"	"	"	"	1.85	5.21	2885.40	"	0.8	1.0	51	53	59	1	"	"	beams dumped.
20757	"	"	"	"	4.31	10.25	2895.65	"	1.4	2.0	46	43	116	4	"	"	
20758	"	"	"	"	3.60	9.89	2905.54	"	1.2	1.6	46	44	112	2	"	"	
20759	"	"	"	"	3.11	8.31	2913.85	"	1.1	1.4	48	46	94	2	"	4835	
20760	"	"	"	"	2.60	1.41	2915.26	"	1.0	1.2	48	48	16	0	"	4834	BEAMS DUMPED

RUN	DATE	START	STOP	AT RUN START I^+	I^-	DEAD TIME (%)	TIME (sec)	RECORDS IN	RECORDS OUT	ALL $*10^6$	T_0 REJ $*10^6$	T_1 Acc SUM	T_2 Acc SUM	T_1 Bit 2 $E_{LG}>6GeV$	T_2 BIT 17 $2T \cdot E_4 \cdot \geq 2TR$

15[00] Found z-chamber dividing wires drawing current. Have switched it off and taken it out of the readout from run 20744. (Readout pattern is now 77736) (At the SPY also) &C
↑ VTX chr out ↑ z-chr out

Caution !!
In R20739 ~ R20743 we checked the LG HV. So there were 21 PMT's, whose HV were ~~the~~ pulled out they were 1/4 of a ring (ring 19 ~ 24). The check is still continuing. K.K.

16[00] H. Mills, N. Magnussen on shift 11/5/85 Saturday

16[05] z-chr switched on again but still drawing current; till I can discuss with Richard (ie Sunday)

LEAVE Z-CH OFF

17[07] Lots ILLEGAL JETC DATA and a few missing LAMS branch 6 crate 7. Waggled relevant cables. Ok now
18[01] Whilst trying to repair DL8s a DISC TRANSFER ERROR – then system would not reload.
Re build system and JDAS

18[40] Back on the air - - -
18[41] LGHV error!
20[38] New kill
20[30] JETCH hard trip
21[21] Jetch soft trip
21[31] Petra changes energy (2?.824) and looses most of beams

The JDAS has been altered so that when a chamber HV trips then if the RZ & beampipe chambers are NOT in the readout it won't produce confusing messages saying they have 'tripped'. i.e. only the tripping chamber HV (Jetc or LG) will be listed.

Confusing note about beampipe / vertex chamber. it says to switch it ~~on~~ on (but it is not in the readout - no request that it be) and if hard trip dont do anything - what does latter mean? W. Bartel didn't understand it either so reasoning that if it is left OFF then no harm can be done --- we leave it off
Why didn't you phone the VTXC on-call expert? – W.B said not to

Processors ON/OFF N50	MIP	TOF	FAMP	<L> $10^{30} cm^{-2} s^{-1}$	Bhabha $\int Ldt$ nb^{-1}	$\int Ldt$ Exp, energy	IBM/Tape OUTPUT	At Run Start ID (μA)	TOF (V)	ONLINE REJ MIPROC T_2 %	NORD 50 T_1 & T_2 %	Σ_{Bhabha}	MH	E_{beam}	Mag. Field	Remarks

23[41] Hard trip - inner detector
~~[illegible]~~
12-5-85 0[00] DUERDOTH & J. WAGNER ON SHIFT
~0[01] INNER DETECTOR TRIP → ANODE CURRENT → RESET
Gas check done
Running with Vertexchamber off and Z chamber off. all LG PMTs plugged in.
~0[44] STANDARD HISTS TAKEN FOR PREVIOUS RUN (20754).
FORWARD COUNTER MEAN TDC & ADC HISTS DON'T LOOK RIGHT (?)
How should we respond to message YVOLTS ERROR IN HV SYSTEM SUPPLY/MAINFRAME =15
LG SYSTEM HV CONTR : NO RESPONSE.
ID Trip. & JDAS ERROR 52 control word 001600 JT HV FAIL?
Several ID Soft trips.

8[00] Kawagoe and Laurikainen on Shift

The LG HV has not tripped since 18:41 yesterday. Now it seems working stable, though the origin of the HV trip is not clear ....

9 00 SHORT BREAK
10 30 PKR tells there are problems with DESY (No current in the magnets) Magnet current to 500A
14 00 MARK J tells that DESY will start in 10-15 minutes. The current is 1200A, and we cannot get it to 500A.
14 30 INJECTION We raise current to 7500A.
15.50 Taking data again. VERTEX CHAMBER ON. Very high tof rate.
16.00 Krehbiel + Hellenbrand on shift
16.30 JDAS RE. ERROR 46 – MP-out of sequ. YY=1 } Simult.
" " " 45 MP16 analysis incomplete. }
17.14 " " " 45 MP-16 analysis incomplete 2* ;
17.16 " " " 46 MP.16 out of sequence.
17.26 " " " " Same
19.10 Error in HV System No response MFR 14 (see system printout)
19.41 JDAS. Error 45 MP-16 analysis incomplete YY=1
20[00] Hellenbrand replaced by Komamiya
Ca 20[00]. Beam dumping announced, but cancelled. KEINE POSITRONEN After 5 Minutes we run the HV up again and continue data taking
20[15] JDAS Error 33, Missing LAM b. 4 cr. 6

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 Bit2 $E_{LG} \geq 6$GeV	T_2 BIT 17 $2T \cdot E_4 \cdot \geq 2TR$
20761	12-5-85	5.25	5.29	6.60	6.66	3.3	185	590	354	48	16	252	560	71	6
20762	"	5.56	6.41	6.22	6.09	25.5	254	8004	4533	651	166	3859	7293	1037	38
20763	"	6.41	7.37	5.15	4.05	12.5	278	8002	4145	626	90	4213	7033	1082	41
20764	"	7.37	8.20	4.61	3.54	11.0	2284	6027	2914	594	65	3374	5034	809	18
20765	"	15.51	16.39	6.05	6.00	15.9	2547	8002	4592	662	105	4078	7108	1084	57
20766	12-5-85	16.40	17.24	5.30	5.27	15.2	2592	8002	4390	671	102	4315	6602	1078	26
20767	"	17.24	18.10	4.80	4.80	12.2	2810	8002	4070	737	89	4338	6787	1082	36
20768	"	18.12	19.09	4.33	4.32	10.1	3456	8002	3569	900	91	4642	6752	1084	27
20769	"	19.10	19.52	3.87	3.87	8.4	2497	5438	2269	645	54	3257	4073	760	15
20770	"	20.06	20.26	3.51	3.43	8.2	1124	2425	1015	293	24	1420	1817	284	4
20771	"	21.01	21.57	5.49	5.79	11.4	3022	8002	3981	787	89	4394	6146	1064	23
20772	"	21.58	22.51	4.81	5.04	9.6	3228	8002	3704	840	80	4578	6175	1058	33
20773	"	22.53	23.51	4.26	4.45	9.3	3523	8002	3600	917	85	4763	6195	7091	25
20774	"	23.52	00.33	3.79	3.94	8.7	2483	5508	2395	646	56	3390	4077	725	9
20775	13/5/85	1.12	1.58	6.31	5.87	12.5	2733	8002	4083	711	89	4359	6133	1058	18
20776	13/5/85	1.59	2.48	5.62	5.14	12.0	2938	8001	4075	764	91	4466	6343	1142	22
20777	"	2.49	3.48	5.01	4.53	9.8	3387	8002	3613	881	87	4563	6214	1059	24
20778	"	3.48	4.00	3.50	3.19	9.2	684	1519	653	178	16	918	1115	187	7
20779	14/5/85	2.36	3.32	4.64	4.70	11.4	3311	8001	3901	861	98	4625	6243	1068	45
20780	"	3.32	4.33	3.93	3.99	8.5	3656	8001	3567	950	80	4905	5916	1252	26
20781	"	4.34	5.38	3.41	3.46	8.2	3825	8001	3336	995	82	4954	5835	1294	23
20782	"	5.39	5.45	2.94	3.00	7.4	334	711	303	87	6	467	465	110	2
20783	"	6.20	7.11	5.43	5.36	10.6	3053	8002	3924	795	84	4453	6056	1106	24
20784	"	7.12	8.05	4.74	4.67	9.7	3162	8002	3719	743	80	4653	5873	1230	28
20785	"	8.07	8.59	4.14	4.08	9.1	2362	5514	2474	615	56	3262	4108	848	10
20786	"	9.08	9.45	5.99	5.99	10.6	931	2613	1252	342	26	1310	2027	308	10
20787	"	19.30	20.13	6.05	6.18	14.6	2534	8002	4354	660	96	4346	6122	1201	38
20788	"	20.13	20.29	5.25	5.47	12.5	778	2274	1118	203	25	1269	1762	330	11
20789	"	23.04	23.50	4.88	5.90	11.8	2760	8002	4262	718	85	4591	5838	1152	27
20790	"	23.51	0.41	4.29	5.25	11.4	2995	8002	3910	778	89	4760	5766	1446	27
20791	15.5.85	0.41	1.42	3.75	4.67	9.4	3226	8002	3606	839	79	4827	5666	1449	27
20792	"	1.42	2.41	3.25	4.08	8.5	3504	8002	3427	912	78	5017	5697	1462	24
20793	"	2.41	2.55	2.87	3.64	8.0	793	1822	766	206	16	1142	1220	358	7
20794	"	4.10	5.03	5.66	5.85	11.6	2307	8002	4151	730	85	4558	5763	1282	15

Processors ON/OFF N50	MIP	TOF	FAMP	$\langle L \rangle$ $10^{30}\,cm^{-2}\,sec^{-1}$	Bhabha $\int Ldt$ nb^{-1}	$\int Ldt$ 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 & T_2 %	Σ BHABHA	MH	E_{beam}	Mag. Field $\pm$ kGauss	REMARKS
ON	ON	ON	OFF	3.99	0.53	2915.79	IBM	1.5	2.0	45	42	6	0	21.8	4834	beam lost. high dead time
"	"	"	"	3.40	8.39	2924.18	"			46	44	95	3	"	4833	
"	"	"	"	2.07	7.24	2931.42	"	1.0	1.2	49	49	82	2	"	4834	
"	"	"	"	1.64	3.75	2935.17	"	0.8	1.0	50	53	31	4	"	"	beam dumped
"	"	"	"	3.81	10.78	2945.95	"	1.4	2.2	48	43	122	4	"	4845	
"	"	"	"	3.06	8.22	2954.17	"	1.2	1.5	47	46	93	1	"	4847	
"	"	"	"	2.65	7.16	2961.33	"	1.1	1.2	49	50	87	3	"	4847	
"	"	"	"	2.04	7.42	2968.75	"	1.0	0.8	48	56	84	1	"	4845	
"	"	"	"	1.74	4.68	2973.43	"	0.85	0.46	49	59	53	0	"	4844	Beams dumped
"	"	"	"	1.47	2.39	2975.82	"	0.75	0.44	48	60	27	0	"	4844	Continuing with old beams
"	"	"	"	3.30	11.31	2977.23	"	1.15	0.9	44	57	128	0	"	4844	Trigg. HV off at Run Start
"	"	"	"	2.86	9.45	2986.08	"	1.0	0.6	47	54	107	4	"	4844	
"	"	"	"	2.04	7.95	2994.03	"	0.85	0.5	50	56	90	3	"	4844	
"	"	"	"	1.73	3.89	2997.92	"	0.75	0.42	51	58	44	1	"	4844	Beams dumped
"	"	"	"	4.17	13.43	3011.35	"	1.2	0.9	43	50	152	5	"	4844	
"	"	"	"	3.28	10.16	3021.51	"	1.1	0.7	47	50	105	1	"	4844	
"	"	"	"	1.97	6.18	3027.69	"	0.9	0.6	47	56	70	2	"	4845	
"	"	"	"	1.48	1.15	3028.84	"	0.6	0.35	50	59	13	0	"	4846	beams dumped
"	"	"	"	2.49	6.98	3035.82	"	1.0	1.2	49	52	79	2	"	4850	
"	"	"	"	1.93	6.27	3042.09	"	0.8	1.0	50	56	71	1	"	"	
"	"	"	"	1.32	6.54	3048.63	"	0.7	0.4	50	59	74	2	"	"	
"	"	"	"	1.26	0.44	3049.07	"	0.6	0.3	53	59	45	1	"	"	beams dumped
"	"	"	"	3.53	10.34	3059.41	"	1.1	2.2	45	52	117	4	"	"	
"	"	"	"	2.70	7.77	3067.18	"	1.0 0.6	0.6	46	55	88	0	"	"	
"	"	"	"	2.00	4.59	3071.77	"	1.0	0.5	48	56	52	0	"	"	beams lost
"	"	"	"	4.17	3.71	3075.48	"	1.4	0.8	44	51	41	0	"	"	beams lost
"	"	"	OFF	3.99	10.69	3086.17	"	1.4	1.4	43	46	121	4	"	4840	
"	"	"	"	2.39	2.30	3088.47	"	1.2	1.1	46	52	26	0	"	4844	beams dumped after partial loss
"	"	"	"	3.55	9.98	3098.45	"	1.2	1.3	45	48	113	2	"	4850	
"	"	"	"	2.85	8.57	3107.02	"	1.1	0.75	47	52	97	3	"	4844	
"	"	"	"	2.13	7.69	3114 71	"	0.9	0.6	47	56	87	1	"	4850	
"	"	"	"	1.65	5.21	3119.92	"	0.8	0.5	50	58	59	0	"	4849	
"	"	"	"	1.37	1.24	3121.16	"	0.6	0.4	48	59	14	0	"	4849	Beams dumped
"	"	"	"	4.25	11.92	3133.08	"	1.2	1.0	43	49	139	2	"	4847	

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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 ×10⁶	TØ REJ ×10⁶	T_1 ACC SUM	T_2 ACC SUM	T_1 Bit 2 E>6GeV	T_2 BIT 17 2T. E_t · ⇒2TR

12/05/1985. 20^{16} New page in logbook opened. 20^{20} New positrons expected soon.

20^{26} JDAS R. ERR 33 Miss LAM br 4 Cr. 6 | 20.26 Beams finally dumped

20^{56} Beams up again.

21^{00} HV Tagging (EMFR=61) corrupt: should be ~1.3kV now Zero
At beginning of Run 20771 Tag HV MFR 61 was off. Could be turned on manually. This happened at about event Nr 502 in Trigger Box ≈ 190 on IBM.

21^{10} Almost too good conditions to be credible; At 2×5.5 mA TOF-Rate 0,75, DT. 10% !

21^{35} There was an HV alarm from Z-Chamber. (Komamiya had turned it on at beginning of run)

21^{45} Missing LAM br 3 cr. 2 Muon Chambers Twice

21^{55} JDAS ERR 45 MP-16 anal. incom YY=1

22^{07} " 46 out of seqn. " Several times LG Barrel >250 hits

22^{30} HV Read Error

22^{35} JDAS ERR 33 Miss LAM br 4 cr. 6

23^{10} Error 45 MP-16 analy incom YY=1

" 33 Miss LAM br. 4 cr 6

23^{55} " 45

Monday 13/5/85 00.00 Jörg Hagemann & Fred Loebinger

00.15 Gas check done. All OK.

00.35 Beams dumped.

01.42 JDAS READOUT ERROR 45 - MP 16 analysis incomplete; YY=1

02.12 " " " 46 - MP 16 out of sequence; "

02.22 " " " " " " " " "

02.30 " " " 45 - MP 16 anal. incomplete; YY=1

02.56 " " " " " " " " "

02.58 " " " " " " " "

03.14 Suddenly high background ⇒ ID soft trip (lot rate) Beams partially lost

03.21 JDAS READOUT ERROR 33 - missing LAM br. 4 cr. 6 : ID Ring 2

03.49 " " " " " " br. 4 cr. 6 : " "

03.56 " " " " " " " " : " "

03.57 " " " " " " " " : " "

04.00 Beams dumped.

05.30 Still no new beams : Unterbrechung Vacuum leak.
Run magnet down to 500 A.

Processors ON/OFF N50	MIP	TOF	FAMP	<L> 10^{30} cm⁻²sec⁻¹	Bhabha ∫Ldt nb⁻¹	∫Ldt exp. energy	IBM/Tape OUTPUT	At Run Start ID (μA)	At Run Start TOF (V)	ONLINE REJ SUMO MIPROC T_2 %	ONLINE REJ NORD 50 T_1 & T_2 %	Σ_{Bhabha}	MH	E_{beam}	Mag. Field −1=Ground	Remarks

05.36 REFORM - Jdo submitted

07.21 Message on TV "Restart ca. 12 Uhr"

08.00 W. Bartel & J. Chrin on shift

8^{25} gas check done.

9^{05} From old run # 20777 (last but one) the histograms # 22,23,26,27 are missing. EXIT/RELOAD → ok Reg.

JADE is coordinating (until when?)

13^{40} PKR request we turn up magnet current. Injection now appears on screen. (Turn down all HV.)

14^{20} "Injection" looks vague ⇒ magnet down to 1500 amps.

15^{10} "Temporary Access" on screen. ⇒ magnet to 1300 amps.

15^{15} Short break.

16^{45} Injection appears on screen

16.00 Beate Naroska and H. Riesoberg on shift.

DESY is down because of Magnet Power Supply problems (switched off). So there is no beam to improve the vacuum in PETRA. PETRA has "VAKUUM PROBLEME". "RESTART" shift to "23.00"

17.00 Magnet to 500 Amps

23.15 "Restart ca 0.00 h"

Tuesday 14/5/85

0.00 John Nye and Michael Kuhlen on shift

0.20 Magnet run up to 7500 A.

0.40 Gas check done.

2.39 the first beams
LG - HV error, mainframe 15 no response
LG distributors primary HV = ..., should be ...

2.53 JDAS Readout error 46 - MP-16 out of sequence; YY=1

3.05 " " " 45 - " analysis incomplete; YY=1

3:17 3 times we have had No-triggers accompanied by 100% dead-time Pause & Continue cures it.

RUN	DATE	START	STOP	AT RUN START I^+	I^-	DEAD TIME (%)	TIME (sec)	RECORDS IN	RECORDS OUT	ALL $*10^6$	T0 REJ $*10^6$	T_1 Acc SUM	T_2 Acc SUM	T_1 Bit 2 E>6GeV	T_2 BIT 17 2T·E_4·≥2TR

Processors ON/OFF N50	MIP	TOF	FAMP	<L> 10^{30} cm^{-2}s^{-1}	Bhabha $\int Ldt$ nb^{-1}	$\int Ldt_{exp, energy}$	IBM/Tape OUTPUT	At Run Start ID (μA)	TOF (V)	ONLINE REJ MIPROC T_2 %	NORD 50 T_1 & T_2 %	Σ_{Bhabha}	MH	E_{beam}	Mag. Field	Remarks

14/5/85

3:20 YSPY err TOF TDC 41 (before run 20800!) : No HITS - TDC map shows holes that appear to have existed for some time ⇒ ignored it!

3:30 JDAS readout error 33 - Missing LAM branch 4 crat 6 : ID Ring 2

4:06 " " " " " " " " " " " " "

" " " " " " " 2 " 4 TOF 2 counters.

8⁰⁰ Kawagoe and Rancke on shift

The error massages "LG distributor primary HV = ___ , should be ___ " were due to read errors. The problem ~~is now so~~ has been solved. ~~The HV~~ The real values of HV were correct. [K.K.]

↑ what was the problem?!

8⁴⁸ I.D. soft trip ← due to beam loss.

9⁴⁷ I.D. hard trip ← beams lost again

10⁵⁴ IBM error 54 on screen. As we are between fills it is not clear whether this is genuine or not!

Short break Magnet ⟶ 500 A

in case of ID trouble → phone 745-9409

13⁰⁵ Machine studies Magnet → 500A

15⁴⁵ New versions of YPAROT, YPARA in (to save space in YPARA). Backup versions in OLD-YPARA, OLD-YPAROT J.O.

16⁰⁰ Dietrich & Warming

short break at least for 1h - Syncrotron Magnetfehler (Erdschluß) 15⁰⁰

17-19⁰⁰ Maschinenstudien (Super-Cavity)

Gas-check OK

19³⁰ After cavity tests and a very short fill time new fill ready: 2×6 mA, low background → excellent

23³⁰ YVOLTS Error : HU-Syste Supply/Mainframe 11 and 15 no response

15.5.85 F. Loebinger U. Schneekloth on shift

The LG high voltage error is due to reading error. Two channels are selected simultaneously. (distributor #14 seems to be always selected) S. Komamiya

0.30 Gas check done - O.K.

01.30 Hard I.D. trip

02.55 Beams dumped.

04.10 New beam.

04.30 Hard I.D trip.

04.45 → 05.15 4 soft I.D. trips.

Standard histogs for run 20794 show spike in Jet chamber hit map (# 510)

This spike has disappeared in run 20795

Colour TV continually flashing "ISPLAY SEARCHING FOR OLD RUN" on right-hand side of screen even though it correctly displays histogs for current run.

5²⁵ hard I.D. trip

5⁴⁶ " "

5⁵⁶ " "

] Beam conditions are quite good — low, stable background. What is the cause of all these I.D trips (both soft & hard)?

8⁰⁰ J. Nye and H. Riesebeg on shift.

8²⁰ Beams dumped.

9⁰⁵ Beams ready. Start R 20799

9²³ JDAS ERROR 52 Control word 1040

Reason :- LG HV Fail? Continued → ok

Note : In this run the LG HV error messages didn't show ups on the Teletype

Luminosity is good : $<L> \approx 4.8 \times 10^{30}$

Specific Lumi $\approx 53 \times 10^{28}$! later 23×10^{28}

Dead time 10 %

9⁴⁰ S. Komamiya checks LG HV. OK.

9⁵⁶ Run # 20800 started with Z-chambers on Readout Pattern 77737

10⁰⁵ JDAS ERROR 52, control word 000001. Reason(s):- Beam loss? Cont'd → ok

10³⁰ Background gets high, SHORT BREAK, Loss of 1mA/beam, no trips.

YVOLTS errors : LG Supply # 15 no response

LG Distributor#14 1982 V should be 1970 V

11⁰⁰ Because of magnet troubles of the synchrotron a refill is not possible at the time being.

We will keep this fill

11³⁵ Magnet trips : Vorlauf < Pumpe 2 sec.

Second try : Alarm. Durchflußwasser gekühlte Kabel

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_L ≥ 6GeV	T₂ BIT 17 2T. E_T ≥ 2TR
20795	15/5/85	5.04	6.08	4.92	4.98	10.4	3036	8002	3879	791	82	4742	5700	1354	18
20796	"	6.08	7.05	4.23	3.81	9.3	3398	8002	3492	885	83	4861	5718	1410	16
~~20797~~	"	7.05	8.05	3.95	3.35	8.3	3557	8002	3863	926	77	5021	5888	1348	22
20798	"	8.05	8.20	3.34	2.97	8.2	887	1986	789	231	19	1248	1393	339	8
20799	"	9.06	9.56	6.21	6.03	11.7	2890	8001	4157	752	88	4387	6028	1232	22
20800	"	9.56	10.52	5.41	5.23	11.1	3227	8001	4008	841	93	4679	5988	1267	13
20801	"	10.52	11.35	3.49	3.37	8.3	2536	5597	2512	660	55	3576	3780	881	10
20802	"	12.56	13.20	5.33	6.27	16.6	1135	3015	1618	296	49	1540	2469	408	8
20803	"	13.28	13.46	4.89	5.78	16.5	1062	2878	1543	276	46	1523	2257	415	14
20804	"	17.05	17.54	6.22	6.19	16.5	2910	8002	4407	758	125	4304	6194	1071	29
20805	"	17.55	18.45	5.36	5.32	14.2	2949	8001	4328	767	109	4406	6156	1239	29
~~20806~~	"	18.45	19.42	4.70	4.66	11.0	3321	8002	3993	864	95	4588	6098	1310	26
~~20807~~	"	19.42	20.42	4.11	4.06	8.9	3560	8001	3658	907	82	4758	6098	1272	23
~~20808~~	"	20.42	21.23	3.61	3.57	8.2	2396	5038	2263	623	51	3118	3730	815	15
20809	"	22.13	22.46	6.24	6.17	17.6	1897	5245	2867	493	87	2727	4055	767	16
20810	"	22.49	23.41	5.51	5.18	13.0	2919	7666	4011	760	99	4454	5698	1175	34
20811	"	23.43	0.44	4.83	4.36	9.6	3443	8001	3867	896	86	4739	5927	1235	23
20812	16.5.85	0.44	1.34	4.23	3.78	9.9	2974	6214	2878	773	76	3768	4562	961	18
20813	"	2.12	3.18	5.37	4.62	10.4	3586	8002	3923	933	97	4607	6171	1099	18
20814	"	3.18	4.23	4.64	4.00	8.4	3719	8002	3712	969	81	4847	5874	1164	13
20815	"	4.23	5.15	4.09	3.50	10.5	2135	5454	2911	555	58	3823	3041	603	16
20816	"	9.07	9.58	5.72	5.91	17.5	2495	8002	4928	648	114	5408	4344	717	47
20817	"	09.58	10.48	5.10	4.38	11.5	2962	8002	4278	711	89	5350	4862	893	46
20818	"	10.49	11.35	4.63	3.96	12.0	2717	8002	4476	707	84	5634	4312	844	43
20819	"	11.38	12.40	4.21	3.59	10.7	2899	8002	4423	759	80	5690	4263	820	28
20820	"	13.07	13.55	6.19	5.92	18.2	2770	8002	4421	726	132	4555	5704	935	54
20821	"	13.55	14.51	5.54	5.27	14.0	3174	8001	3948	826	116	4398	6251	1170	20
20822	"	14.52	15.48	4.86	4.61	10.6	3319	8002	3907	869	99	4514	6062	1112	29
20823	"	15.49	15.55	4.32	4.09	8.9	248	614	281	64	5	342	419	74	1
20824	"	17.42	18.38	4.68	5.72	10.0	3335	8002	4488	867	87	4718	5873	969	24
20825	"	18.39	19.44	4.10	5.06	9.1	3702	8002	3716	964	86	4603	6261	1082	27
20826	"	19.43	20.50	3.56	4.45	8.7	3743	7569	3396	974	85	4505	5807	1036	25
20827	"	22.03	22.20	5.94	5.92	11.9	971	2373	1256	253	30	1255	1926	308	18
20828	"	~~22.24~~	23.20	5.65	5.64	11.9	3224	8002	4138	839	100	4388	6323	1094 ~~257~~	20

PROCESSORS ON/OFF N50	MIP	TOF	FAMP	⟨L⟩ 10^30 cm^-2 s^-1	∫Ldt (Bhabha) nb^-1	∫Ldt EXP. ENERGY	IBM/TAPE OUTPUT	AT RUN START ID (μA)	AT RUN START TOF (V)	ONLINE REJ SUM MIPROC T₂ %	ONLINE REJ NORD-50 T₁ & T₂ %	Σ Bhabha	MH	E_beam	MAG FIELD −1 = 6 GAUSS	REMARKS
ON	ON	ON	OFF	2.82	8.48	3141.56	IBM	1.0	0.65	46	53	96	2	21.800	4847	
"	"	"	"	2.09	7.69	3149.25	"	0.9	0.5	48	57	87	4	"	4848	
"	"	"	"	1.63	6.27	3155.52	"	0.8	0.4	50	59	71	1	"	4847	
"	"	"	"	1.30	1.24	3156.76	"	0.7	0.3	51	62	14	0	"	4850	beams dumped
"	"	"	"	4.54	15.55	3172.31	"	1.2	0.8	43	49	176	2	21.802	4844	
"	"	"	"	2.72	7.16	3179.47	"	1.1	0.7	47	51	81	3	21.802	4846	With z-chamber on
"	"	"	"	1.42	3.53	3183.00	"	0.7	0.4	50	56	40	0	21.800	4848	" Magnet trip
"	"	"	ON	3.39	4.42	3187.42	"	1.2	0.85	44	48	50	1	21.802	4840	With FAMP on
"	"	"	"	3.11	2.65	3190.07	"	1.2	0.75	43	47	30	0	21.800	4840	beams dumped to tune transmitter
"	"	"	"	3.97	11.48	3201.55	"	1.3	1.0	44	46	130	2	"	4844	
"	"	"	"	3.16	8.84	3210.39	"	1.2	0.8	45	47	100	0	21.802	"	
"	"	"	"	2.37	8.31	3218.70	"	1.0	0.7	47	52	94	2	21.802	4840	
"	"	"	"	1.84	6.54	3225.24	"	0.9	0.55	49	55	74	1	21.802	4841	
"	"	"	"	1.51	3.89	3229.13	"	0.8	0.45	52	56	44	0	21.800	4837	BEAMS DUMPED
"	"	"	"	4.20	8.13	3237.26	"	1.4	0.9	41	46	92	3	"	"	
"	"	"	"	2.85	7.86	3245.12+2	"	1.2	0.8	47	49	89	2	"	4838	
"	"	"	"	2.06	7.95	3253.07	"	1.0	0.6	48	53	90	1	"	4835	
"	"	"	"	1.63	6.01	3259.08	"	0.8	0.5	50	55	68	1	"	4834	Dump
"	"	"	"	2.49	8.13	3267.21	"	1.0	0.8	46	52	92	0	"	4834	
"	"	"	"	1.94	7.22	3274.43	"	0.8	0.5	49	55	89	2	"	4835	
"	"	"	"	1.29	3.36	3277.79	"	0.8	0.4	50	48	38	1	"	4834	frequent HV trips L6
"	"	"	"	2.61	5.74	3283.53	"	1.3	1.6	45	39	65	1	"	4834	
"	"	"	"	2.14	7.60	3291.13	"	0.95	1.2	49	47	86	2	"	4838	
"	"	"	"	1.81	4.59	3295.72	"	0.8	0.9	49	45	52	3	"	4835	
"	"	"	"	1.44	3.98	3299.70	"	0.8	0.45	50	46	45	1	"	4837	
"	"	"	"	3.03	8.39	3308.09	"	1.4	1.2	43	46	95	4	"	4840	
"	"	"	"	2.38	8.04	3316.13	"	1.2	0.8	46	50	71	3	"	4841	
"	"	"	"	1.86	7.51	3323.64	"	1.05	0.7	46	52	85	2	"	4840	
"	"	"	"	1.76	0.44	3324.08	"	0.9	0.6	45	56	5	-	"	4842	beam partially lost
"	"	"	"	2.86	9.53	3333.61	"	1.0	0.7	47	49	105	0	"	4840	
"	"	"	"	2.09	8.57	3342.18	"	1.0	0.55	48	55	97	3	"	4841	
"	"	"	"	1.46	5.65	3347.83	"	0.8	0.45	50	56	64	3	"	4839	beam dumped
"	"	"	"	3.94	3.27	3351.10	"	1.3	0.9	46	48	37	2	"	4838	
"	"	"	"	3.01	10.51	3361.61	"	1.2	0.7	46	49	119	2	"	4837	

RUN	DATE	START	STOP	AT RUN START I^+	I^-	DEAD TIME (%)	TIME (sec)	RECORDS IN	RECORDS OUT	ALL $\times10^6$	T∅ REJ $\times10^6$	T_1 ACC SUM	T_2 ACC SUM	T_1 Bit2 $E_{1,2} \geq 6GeV$	T_2 BIT 17 $2T \cdot E_4 \cdot \geq 2TR$

15.5.85

12 10 Problem in the pumps in the Cu water circuit. 4 people are now working on it.
Motor draws too much current. Mr. Pillat adjusts the switch-off temperature higher. Watch!

12 32 Magnet up

12 55 New fill is ready Start Run 20802 with FAMP on (version PATHORJ 4, OPSYST 28.4.85 15/4/85)

13 15 IP trip: Problem with switching Z-chamber back on – Richard Hedgecock comes to fix it.
(fetched by John Nye, training for "Tour de France", from canteen)

13 46 PKR phone to say that they must stop the run to tune a transmitter, or else they think it may take a day or more to mend, if it breaks.

14 00 Z-chamber fault refuses to manifest itself now that we are set up to study it! In the meantime we are leaving it ON, but if it trips by itself, without associated inner detector hard trip, CALL EXPERT (even at night). SLC 15/5 14 00

Note on water pumps of Cu-circuit: 1.) Expert says that motor becomes too hot. The water flow is too high. But reason is unknown. 2.) Mr. Fregin calls to tell that one ventillator of the pump house is broken. Keep door open. Repair not before ~~Monday~~ (20.5)

16 00 W. Bartel & K Kawagoe on shift

17 05 start run 20804: μ-crate 4 missing fuse blown, replaced
crate 14 ~~missing~~ gives no Q-response disappeared again

17 45 gas check done

18 30 J. WAGNER REPLACES BARTEL ON SHIFT.

19 00 MISSING LAM: BR 2 C4 : TOF2

20 06 YSPY ERROR TOF TDC NO HITS ; 26 , 70

20 20 " " " ; 22

Leave VTXL OFF R.Ramcke

21 15 YSPY ERROR: TRIG 2 O/P MISSING : 135
WANT TO LOOK AT HIST BUT TEXTRONICS TERMINAL IS DETACHED & CANN'T BE RECONECTED; WAIT ~10 MINS UNTIL ~~BEA~~ FILL IS DUMPED & THEN INVESTIGATE. THIS YSPY ERROR MAY HAVE SOMETHING TO DO WITH EARLIER TOF YSPY ERRORS.

Processors ON/OFF N50	MIP	TOF	FAMP	<L> $10^{30} cm^{-2} s^{-1}$	Bhabha $\int Ldt$ nb^{-1}	$\int Ldt$ exp, energy	IBM/Tape OUTPUT	At Run Start ID (μA)	TOF (V)	ONLINE REJ MIPROC T_2 %	NORD 50 T_1 & T_2 %	Σ Bhabha	MH	E_{beam}	Mag. Field	Remarks

22 19 YSPY ERROR TOF TDC NO HITS : 48

22 37 " " " " : 28

22 46 BOTH JET & Z CHAMBER TRIP → LOOKS LIKE THEY LOST A LITTLE e^- BEAM (~.5 mA).

22 50 JET CHAMBER SOFT TRIP. PAUSE & RESET.

23 37 MISSING LAM BR4CR6 ID RING 2

23 39 BOTH JET & Z CHAMBER TRIP

23 45 JET CHAMBER SOFT TRIP. PAUSE & RESET.

23 53 MISSING LAM BR4C6 ID RING 2
YSPY TOF TDC NO HITS : 58

16.5. 0.00 Narosha + Launikainen

0.19 Gas-check Channel A5 digital readout of O_2-monitor is off by factor 10.
Increased histogramming percentage to 100% because there were hardly events in TOF hists and doesn't cause deadtime.
(change back if deadtime gets high)

0.41 JDAS RO ERROR 33 MISS LAM BR 4 CR 6

1.22 Missing LAM BR 2 CR 3 every event
I went and touched Miproc cable and it went away.

1,30 Asked for new filling

2.20 After 10 min of new fill, part of beams lost. Rushed around to reset alarms, especially of VTX chamber, which wasn't on at all!

4.18 Short trip of some HV → Screen says LG?
controlwort 240 Happened 2X
No: 1,000,000 times

4.54 Missing LAM Br. 4 Cr. 6

4.57 IBM on-line JOB error check 2 after a dump

The sparking LG was Barrel 4, distributor 6 (cable 3) (the lower one)
I pulled out 21 cables. Then sparking stopped.
10 back in again, the rest after beams were dumped.

5.15 ask for new filling

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 $E_{1,2} \geq 6$ GeV	T_2 BIT 17 2T·E_4→2TR

Processors ON/OFF N50	MIP	TOF	FAMP	⟨L⟩ 10^{30}	Bhabha $\int L dt$ nb^{-1}	$\int L dt$ exp, energy	IBM/Tape OUTPUT	At Run Start ID (μA)	TOF (V)	ONLINE REJ MIPREC T_2 %	NORD 50 T_1 & T_2 %	Σ_{Bhabha}	MH	E_{beam}	Mag. Field	Remarks

16.5. 8^00 R. Hedgecock, U. Schneekloth
9^07 new fill ready, started RUN 20816
9" hard I.D. trip
9^22 "
9^50 "

12^18 JDAS error 33 — missing LAM for 4 cr6 : ID ring 2

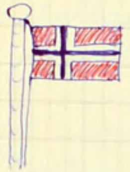
12^30 VTXC-Gas changed to standard-gas. In case of gas-alarm call VTXC-Expert via Euro beep. P. Ramcke

13^07 new fill, start RUN 20820

16.00. Eckhard Elsen & Fred Loebinger

16.20 Gas check done — O.K.
18.35 missing LAM b4 c6 ID ring 2
19.45 " " "
20.25 b2 c4 TOF2 counters
20.30 I.D+Z ch. Hard trip
22.25 No events, no triggers. Pause - Continue did not help. Stop run restart new run — all O.K.
23.00 Soft trip of I.D.
23.20 Hard trip I.D. ID.+Z ch.

17/5/85 Norway's Constitution Day! Hurra!!



00:00 Kawagoe, Skard on shift.

0^50 Trigger 2 output missing; 1 0 1
4^24 " " " " ; 1 8 9
4^42 I.D. and Z-chamber tripped due to the loss of a part of e^- beam.
4^52 again.

During R20835 severe HV error of LG was found. The current of HV Barrel 4 was too low, due to the error of Distributor 6. Distributor 6 was uncontrollable, and HV values were set to less than 1000 V for most of all channels in it. (Ring 19~21, Tor).

17/5/85

8^00 Warming and Lauribainen on shift

(cont'd from the last page) Dist. 6 was replaced by another one. HV values has been reset and checked. I hope that the HV problem since last week has been solved. (But I must repair the broken one!)

K. Kawagoe

9^00 gas check OK
9^45 asking for a new fill (PETRA claimed they were ready)
at the first try "DESY synchrotron failed because of thermal problems
since then: "Short break" at least until 15:35

16.00 Elsen, Weber on shift:

16.10 PETRA-Monitor says "Unterbrechung; Restart 5,18" pm
This is meant ironically - they don't know, when they can restart. It all depends on "K".

16.25 Gas check done
16.35 Petra announcing injection. "Switch magnets on".
19^00 Restart 1900. Break. Set magnets to 2000 A
22^10 PKR asks for magnet to be set to full value; they think everything is fixed and they will have luminosity in 45 min.
22^15 mag. setting finished: 7499 amps

22^45 DMA time out, branch 2 gate one repeatedly; stop run 20838
22.54 ~~LAM~~ JDAS read out error branch 2 gate 4 missing LAM: TOF2 counters

18/5/85 0^00 BETHKE & J. WAGNER ON SHIFT
0^32 GAS CHECK DONE.
1^03 MISS LAM B7 C1 : ID RING 3 <π
1^32 ILLEGAL JETC DATA MESSAGE STAYS ON, ~1½ MIN.
SHOOK DL8'S, WENT AWAY.
~~[illegible]~~ 1^44 1 MISS LAM B3 C4 Z CHAM PART 1 } PAUSE/CONTINUE CURES
3 " " B2 C3 TOF1 }
1^48 JDAS ERROR 46 - MP-16 OUT OF SEQUENCE : YY=1.

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 Ø 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. $E_4 \geq 2$TR
20829	16/5/85	23:20	0:26	4.95	4.93	9.5	3491	8001	3879	909	87	4635	6063	4124	17
20830	17/5/85	0:28	1:31	4.30	3.75	8.5	3762	8002	3624	979	83	4783	6073	1059	17
20831	"	1:32	1:51	3.83	3.32	7.4	1086	2163	984	283	21	1321	1675	301	2
20832	"	2:52	3:44	6.05	5.94	13.5	3103	8002	4123	808	109	4186	6342	1104	23
20833	"	3:46	4:40	5.33	5.25	12.0	3197	8002	4052	832	100	4458	6301	1155	29
20834	"	4:41	4:59	4.73	4.67	10.3	2508	1875	922.	204	21	1065	1426	281	6
20835	"	6:24	6:50	5.87	5.25	14.3	1479	3452	1742	385	55	1844	2738	427	14
20836	"	8:15	9:17	4.70	3.77	8.7	3729	8001	3676	971	85	4601	6220	957	22
20837	"	9:18	9:48	4.18	3.30	8.5	1782	3821	1668	464	39	2337	2790	525	8
20838	"	22.41	22.46	6.32	6.60	19.7	212	597	312	55	11	303	405	67	0
20839	"	22.50	23.40	6.21	6.49	19.6	2990	8002	4230	778	152	4260	4979	933	29
20840	"	23.41	23.48	2.05	3.63	18.9	412	1142	620	107	20	578	787	119	3
20841	18/5/85	0:58	1:53	5.89	5.51	17.5	3224	8001	4140	839	147	4150	6403	994	27
20842	"	1:54	2:52	5.18	4.84	14.4	3319	8002	3891	863	124	4447	6207	1099	28
20843	"	2:52	3:53	4.58	4.27	12.3	3615	8002	3689	941	116	4651	5910	1079	31
20844	"	3:53	4:21	4.07	3.78	11.5	1613	3608	1645	420	48	2123	2555	511	12
20845	"	4:32	5:00	3.78	3.51	10.8	1587	3272	1374	413	45	1935	2464	443	8
20846	"	5:55	6:50	5.81	5.54	16.5	3208	8002	4038	835	138	4254	6298	998	38
20847	"	6:50	7:08	5.15	4.91	15.6	796	2082	1041	207	175	1145	1545	297	6
20848	"	7:15	8:12	4.87	4.64	13.1	3327	8002	3743	866	113	4511	5908	1154	26
20849	"	8.12	9.15	4.34	4.12	13.0	3707	8002	3677	965	125	4783	5882	1129	21
20850	"	9.16	10.16	3.83	5.56	11.0	3559	7457	3207	926	102	4555	5278	1036	18
20851	"	11.28	12.18	5.98	6.02	17.6	2991	8002	4186	778	136	4466	5709	951	22
20852	"	12.21	13.13	5.28	5.32	17.8	3052	8002	4157	794	140	4521	5719	1055	25
20853	"	13.14	13.45	4.70	4.74	13.4	1839	4595	2193	478	64	2632	3291	666	24
20854	"	13.46	14.44	4.37	4.39	9.6	3437	8002	3626	894	86	4760	5983	1166	26
20855	"	14.44	15.32	3.85	3.84	9.1	2810	6625	2996	731	66	4021	4737	930	18
20856	"	17:25	18:17	6.39	6.69	15	3117	8002	3963	810	119	4284	6414	971	25
20857	"	18:18	19:09	5.75	5.10	14	3018	8002	3865	785	112	4282	6414	1040	26
20858	"	19:09	20:02	5.20	4.60	12	3182	8002	3759	827	98	4503	6222	1156	31
20859	"	20:03	21:00	4.69	4.13	10	3412	8001	3650	887	87	4794	6026	1172	23
20560	"	21:27	21:31	5.98	6.40	12	184	481	226	48	6	244	339	54	1
20861	"	22:04	22:59	6.45	6.35	28.3	2997	8001	4239	780	221	3859	6746	986	34
20862	"	23:40	23:49	5.68	5.57	24	2944	8002	4220	766	187	4149	6759	1061	40

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)	TOF (V)	ONLINE REJ SUM MIPROC T_2 %	NORD-50 T_1+T_2 %	Σ BHABHA	MH	EBEAM	MAG FIELD -1× Gauss	REMARKS
ON	ON	ON	ON	1.95	6.36	3367.97	IBM	?	?	48	53	72	1	21.802	4835	
"	"	"	"	4.40	4.68	3372.65	"	0.8	0.48	50	56	53	1	21.800	4834	
"	"	"	"	1.31	1.86	3374.51	"	0.7	0.4	50	56	21	0	21.802	4835	beams dumped.
"	"	"	"	3.07	8.75	3383.26	"	1.25	1.1	43	50	99	3	21.800	4835	
"	"	"	"	2.49	7.33	3390.59	"	1.2	0.9	47	50	83	3	21.802	4834	
"	"	"	"	1.80	1.41	3392.00	"	1.0	0.6	48	52	16	0	21.800	4835	beams lost.
"	"	"	"	2.89	4.15	3396.15	"	1.2	1.3	45	51	47	2	21.802	4834	LG distributor failed run stopped
"	"	"	"	1.71	7.42	3403.57	"	0.9	1.0	49	55	84	0	"	4835	
"	"	"	"	1.54	3.71	3407.28	"	0.75	0.5	50	58	42	0	"	4837	beams dumped
"	"	"	"	4.38	0.88	3408.16	"	1.30	1.0	40	51	10	0	21.800	4845	Vtx read-out on
"	"	"	"	3.75	10.60	3418.76	"	0.60	0.60	43	49	120	0	21800	4850	~~beams dumped after Sender ausfall~~
"	"	"	"	2.90	0.88	3419.64	"	"	"	35	48	10	0	"	4850	beams dumped after Sender ausfall
"	"	"	"	3.18	10.42	3430.06	"	1.2	0.9	45	50	118	1	"	4844	
"	"	"	"	2.52	8.22	3438.28	"	1.0	0.6	48	53	93	2	"	4834	
"	"	"	"	2.07	7.48	3445.76	"	0.8	0.5	48	55	84	1	"	"	
"	"	"	"	1.76	3.71	3449.47	"	0.7	0.4	47	56	42	1	"	4834	
"	"	"	"	1.47	2.30	3451.770	"	0.6	0.4	50	60	26	0	"	4834	beams dumped
"	"	"	"	3.07	9.72	3461.49	"	1.2	0.8	46	51	110	3	21.802	4839	
"	"	"	"	2.85	2.65	3464.14	"	1.0	0.6	45	52	30	2	"	"	
"	"	"	OFF	2.30	8.92	3473.06	"	0.9	0.6	46	55	101	1	21.800	4838	FAMP off
"	"	"	ON	1.97	7.69	3480.75	"	0.8	0.48	50	55	87	1	21.800	4838	
"	"	"	"	1.49	6.45	3487.20	"	0.7	0.40	49	58	73	4	21.8	4838	Dump
"	"	"	"	3.26	9.54	3496.74	"			43	49	108	3	21.8	4840	
"	"	"	"	2.72	8.57	3505.31	"	1.2	0.65	45	49	97	1	21.8	4840	
"	"	"	"	2.51	5.48	3510.79	"	1.0	0.6	45	54	62	2	21.8	4841	V+X read-out on
"	"	"	"	2.35	7.86	3518.65	"	0.9	0.5	49	56	89	1	21.8	4841	Vtx read-out off
"	"	"	"	1.72	5.30	3523.95	"	0.8	0.4	50	55	60	3	"	4843	BEAMS DUMPED
"	"	"	"	2.62	8.15	3532.10	"	1.2	0.8	45	52	107	4	21.802	4843	
"	"	"	"	2.18	6.57	3538.67	"	1.2	0.7	45	53	82	3	21.800	4843	
"	"	"	"	1.80	5.73	3544.40	"	1.0	0.6	47	54	81	1	21.802	4841	
"	"	"	"	1.50	5.13	3549.53	"	1.0	0.5	50	56	68	1	21.800	4841	beams dumped
"	"	"	"	2.12	0.39	3549.92	"	1.3	1.00	38	56	85	0	21.800	4840	Sender ausfall
"	"	"	"	2.86	4.86	3557.78	"	1.3	0.9	42	48	89	2	"	"	
"	"	"	"	2.17	6.40	3564.18	"	1.2	0.7	46	48	85	3	21.800	4839	

RUN	DATE	START	STOP	AT RUN START I^+	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 Bit2 $E_{LG} \geq 6$ GeV	T_2 BIT 17 2T· E_4 → 2TR

1^{55} MU CRATE 13 HAS TO BE RESET.
JDAS ERROR 33 MISS LAM B3 C2 : μ CHAMBERS
" " 53 SC WATCHDOG FLAG PARMS=000002 140204 8
2x " " 33 MISS LAM B1 C1 : BP CHAMBER
PAUSE/CONTINUE RESETS

TO SHIFT CREWS	FAMP operating instructions until 10/6/85 are glued to the FAMP rack. Please read them through.

3^{15} VSPY ERROR: μ DIGITIZERS MISSING 62-71
μ CHAMBER CRATE 6 HAS BEEN VERY FLAKEY
THE LAST ~½ HOUR → MISSING EVERY 5 MIN.
OR LESS → HAVE TRIED TWICE RESETING ON
FLOOR; IT TAKES BUT FREQUENCY OF SUBSEQUENT
MISSING CRATES (THERE IT GOES AGAIN) NOT
REDUCED.

4^{20} stop run to investigate Jetc illegal data. Found 2 shaky DL8 (wire# 728-74), cleaned contact → seems to be ok.

7^{10} No data taking; trigger-lamps nearly all ~~burning~~ on. Pause/continue does not help, Pause is not accepted (no action). Pressing other function keys → suddenly run summary comes out, though on colour TV run is still in progress (run 20847). Start data again (F1) → no response. Decide to reload Nord. → ok, start new run ~~20848~~ 20848, everything works again.

8.00 Kawagoe, Naroska Gas check done
9.20 Did Famp procedure, by mistake hit : VTX-INIT-LOAD
What does that do??
Discovered, that VTX-chamber is on Do I have to do anything
although nothing in book and on black board it says "off".
Called expert (= H. Kado)
He was also surprised that it was on and being read out.
Will come in later.
9.53 Asked for new filling

Occasional Missing lam
branch 4 crate 6

Processors ON/OFF N50	MIP	TOF	FAMP	⟨L⟩ 10^{30} cm^{-2}s^{-1}	Bhabha ∫Ldt nb^{-1}	∫Ldt Exp. energy	IBM/Tape OUTPUT	At Run Start ID (μA)	TOF (V)	ONLINE REJ MIPROC T_2 %	NORD 50 T_1 & T_2 %	Σ Bhabha	MH	E_{beam}	Mag. Field	Remarks

11.28 New filling ready.
11.45 JDAS RO ERR 45 MP-16 analys incomplete
11.58 "
12.22 I Tried to ~~print~~ get FAMP info when run-summary was still printing. That caused a hang-up. Restart computer.
1259 JDAS R.O. ERR 33 MISS. LAM BR 4 CR 6 ID RING 2
"
"

In event display the VTX chamber hits do not seem to have any correlation with JETC hits. ← ~~Sure~~! anode Voltage is only 1300V (HK)

13.45 Readout pattern changed back to 77737 (oct.) (→ no VTX readout) I don't know why the VTXC was in the readout last night. I am sure I changed it back on Friday when we finished our tests.

To shift crews : The VTXC is not in the readout now, but please switch on it's high Voltage (we hope that this cleans the chamber)

IF it trips : do nothing, leave it off, make a note in the Log-book for the next shift crews to leave it off.

(HK)

15.25 Cello magnet down at the moment. So we wait with refilling to see whether it can be repaired.
15.36 Cello magnet down for several hours, we ask for new filling.

18.5.85
16:00 Nye + Heinzelmann
17:30 Cello magnet (down) for next 2 weeks or so. Compressor has to be taken out and repaired.

18:36 JDAS readout error 33 : Missing LAM br 3 cr 2 : Muon chambers
22:27 ID 8 Vtx Ch. HV trip (soft trip)
23:05 JDAS readout error 45 - MP-16 Anal Incompl. YY=1

19. 5. 85
0:00 Matsumura + Warming
gas check OK
we did the FAMP readout operation as indicated; sending the info to the gould plotter directly gave no trouble but the last line was missing; sending it to the tektronix to copy it over resulted in a Nord hang-up ? should be cured eventually!

RUN	DATE	START	STOP	AT RUN START I^+	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 $E_{1c} \geq 6$ GeV	T_2 BIT 17 2T· E_4 ·≥2TR

19/5/85

1:35 new fill ready,
2:03 partial beam loss → soft ID-trip, hard vtx-ch-trip
2:40 standard histograms OK.
2:42 Nord hang-up at run start, while printing run summary and waiting for IBM link at the same time
restart Nord, restart FAMP, start new run → another hang up
— " — don't — " — — " — → — " — — " —
power Disk & Nord down, power them up again → still hang up at run start
try to rebuild ZDAS → still hang up at run start
we phone Howard for advice, he suggests to rebuild ZDAS, YMENU, YTEXT, YPARA, YPAROT, ZMONX
after having done all this it finally works OK. HEUREKA
Howard suspects YPARA or YPAROT as the most likely candidates for being corrupted.
3:50 continue data taking
4:03 Nord hang-up level 14 → restart always falls back on level 14 hang up
we phone Jan Olsson and Howard Mills again, they say the system is broken, it has to be rebuilt completely, that will take about an hour, both are coming in.

8:00 Bothke, Schmidt on shift

8:20 gas check done
15:30 After long repair and debug work we were able to write data to IBM again: unfortunately without beam, only TOF bar events, just to test PADAC and IBM connection. This was achieved using backup from end of april, since the present disc proved inaccessible.
≥4 cards were found broken in NORD; also the tape drive formatter was found to corrupt the NORD when it was connected, also with power off. It is now completely loose from NORD and will be exchanged. The NORD in Lab I is again dead, will have to wait for Rehlich and the TASSO NORD for final check of cards.
(Delfs believes a power break/interrupt has caused this misery...) Olsson / Delfs
Run start until further notice.
Run Start F4 F9 Readout pattern 77737B Then many <ret>s until transfer to IBM? YES ?
16:15 Sudden soft trip; TOF rate > 10 V → Switch off the HV on screen.
17:08 Rebuild system on System disk and backed it up
Also for Howard: A test run gave a funny error: N50DAR was not loaded, teletype printed transf!! error
A restart of NIO was not possible. However, the old backup on the second drive works fine. Also the new system disc on the second drive was ~~ok~~ and the second trial with the new system disk on the blue drive seems OK. I leave it at that for a try. But the Backup disc is waiting in the old drive so that a switchover is possible also for the night shift
If you shift disc: Don't forget SET-EXP-PAR and update Run Number! J. Olsson

Processors ON/OFF N50	MIP	TOF	FAMP	<L> 10^{30} $cm^{-2}s^{-1}$	Bhabha $\int Ldt$ nb^{-1}	$\int Ldt$ exp, energy	IBM/Tape OUTPUT	At Run Start ID (µA)	TOF (V)	ONLINE REJ MIPROC T_2 %	NORD 50 T_1 & T_2 %	Σ Bhabha	MH	E_{beam}	Mag. Field -kgauss	Remarks

17:40 Next Run will be 20872, Readout pattern is 77737B (VTXch. off!)

ca 19:30 Error "Transf!!" happened again after an attempt to reset the magnet to 7500. Following Olssons instruction, the orange disc drive was connected to the system.
VX-Chamb. µprocs loaded afresh from this disc.
Since beams ~~were~~ were up again, a standard production run was started.
22:00 Twice HV wrong in MFR 61, only slighty, around 40 V too high.
We tried to reload " ", guided by F22NAR via telephone. ~~It did not help.~~
After the reload had been done on MFR 61 and MFR 63 we rembered that we had an old backup disk!
So the tagging voltages are set to some old values! Sorry!
No tagging expert available to give the new numbers. We have to live with the tagging sys as it stands now I'm afraid. — reset tagg ht's to new values - run 20883. J.Nye.

20/5/85
0:00 Middleton and Kado on shift
0:30 Gas check done
3:30 "IBM ERROR 54" on color TV; but run in progress, IBM disk fills up so we ignore it
5:00 part of beams lost - no chamber trip, (Transmitter failure, beams will be dumped)
6:00 still "IBM ERROR 54" on color TV → <EXIT> and <RT ZDAS> → now "IBM ONLINE COMPUTER UP" appears on screen.

8:00 Dietrich & Nye
8:20 gas check done.

most recent tagging high voltages are kept in the rear of "JDAS operators Manual" along with the instructions on how to reset the LeCroy ht units. J. Nye.

16:00 Kawagoe and Warming
16:10 gas check done.
18:00 "IBM ON-LINE-JOB ERROR CHECK 2" apeared several times. "(BAD BANK STRUCTURE)"
18:25 JDAS readout error 33 - missing Lam for 4 or 6 (ID)
18:50 magnet current fluctuation, magnet current had gone up to 7513 Amps, reset on.
19:00 JDAS readout error 33 - missing Lam for 2 or 4 (TOF2)
19:12 JDAS readout error 33 - missing Lam for 3 or 2 (muon ch.)
JDAS readout error 53 - System crate watchdog flag PARMS 000002 140204 oct.
21:50 IBM online Job error-check 2 / bad event structure, faulty part 1017, (or something else)
sometimes ~~wrong~~ illegal continuation record

RUN | DATE | START | STOP | AT RUN START I+ I− | DEAD TIME (%) | TIME (sec) | RECORDS IN | RECORDS OUT | ALL ×10^6 | TØ REJ ×10^6 | T1 Acc SUM | T2 Acc SUM | T1 Bit 2 E1,2 ≥ 6 GeV | T2 BIT 17 2T·E4·≥2TR | Processors ON/OFF N50 MIP TOF FAMP | <L> | Bhabha ∫Ldt | ∫Ldt Exp, energy | IBM/Tape OUTPUT | At Run Start ID (μA) TOF (V) | ONLINE REJ SUM MIPROC T2 % NORD 50 T1 & T2 % | Σ Bhabha | MH | E beam | Mag. Field | Remarks

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 $E_{1,2} > 6$ GeV	T_2 BIT 17 $2T \cdot E_4 \cdot \geq 2TR$
20863	18.5.85	23:57	0:14	3.08	3.42	8.2	956	2087	920	249	20	1251	1558	260	5
20864	19.5.85	1:41	2:41	5.56	5.73	10.6	3344	8002	3851	870	92	4288	6470	946	26
20865–20867 – junk															
20868	19.5.85	3:50	4:04	4:31	3.88	10.8		1030	480	228	114	608	749		
lots of Runs ≤ 20393 (due to backup disc) treat all as junk															
20869	19.5.85	15:59 / 15:57	16:08	5.64	5.94	16.7	374	1190	661	97	16	630	792	151	2 GRH.
20870 and 20871 nonsense runs. (Beams lost etc.) ~~Runs 20872 – 870 Also [illegible]~~															
20872	"	21:17	22:05	6.02	5.65	15.9	2801	8002	4286	729	116	4277	5838	994	37
20873	"	22:16	23:08	5.31	4.97	16.0	3091	8002	4115	805	129	4298	5999	1014	31
20874	"	23:08	00:00	4.77	4.96	13.7	3083	8002	4117	802	110	4517	5874	1016	30
20875	20.5.85	00:00	0:56	4.31	4.63	12.9	3282	8002	3940	854	110	4610	5741	1057	23
20876	"	0:56	1:56	3.91	3.64	12.7	3545	8002	3764	922	117	4803	5788	1121	22
20877	"	1:56	2:00	3.52	3.29	11.4	190	469	226	49	6	264	297	61	0
20878	"	2:30	3:16	5.84	6.21	17.8	2698	8001	4351	702	125	4106	6014	1027	44
20879	"	3:16	4:04	5.23	5.59	16.8	2816	8002	4137	733	123	4166	6118	1077	28
20880	"	4:04	4:54	4.74	5.08	14.4	2966	7987	4075	772	111	4379	5921	1075	29
20881	"	4:54	5:02	4.28	4.59	14.1	409	1062	543	106	158	565	769	137	4
20882	"	7:43	8:38	4.58	5.92	13.3	3236	8002	4123	843	112	4469	5810	909	30
20883	"	15:38	16:24	5.60	5.72	17.4	2745	8002	4346	715	124	4300	5806	1023	29
20884–20885 = junk															
20886	"	16:27	17:19	5.01	5.13	15.5	2999	8002	4059	780	121	4429	5780	1034	21
20887	"	17:19	18:12	4.48	4.62	13.8	3115	8002	4102	810	111	4626	5683	1083	26
20888	"	18:12	19:09	4.00	4.14	13.1	3367	8000	4046	876	115	4758	5700	1064	24
20889	"	19:09	19:33	3.56	3.70	12.3	1418	2206	1152	369	46	1966	2293	482	17
20890	"	21:34	21:54	4.14	4.01	11.9	1189	2559	1324	309	37	1459	2016	306	14
20891	"	21:55	21:59	3.98	3.85	12.3	246	~~262~~	~	64	8	~	~	~	—
20892	"	22:06	23:08	3.89	3.77	12.1	3699	8002	3759	963	118	4734	5918	1065	22
20893	"	23:08	0:13	3.45	3.36	11.0	3880	8002	3561	1010	111	4987	5626	1074	19
20894	21.5.85	1:14	2:07	6.98	5.71	18.3	3109	8001	4223	809	148	4280	5924	1082	18
20895	"	2:07	2:59	6.31	5.06	16.9	3113	8002	4012	810	137	4451	5690	1137	24
20896	"	3:00	3:55	4.74	4.51	13.6	3293	8002	3879	857	117	4569	5769	1132	16
20897	"	3:55	4:08	4.22	4.01	12.6	747	1807	887	194	24	1035	1273	268	5

RUN	PROCESSORS ON/OFF N50	MIP	TOF	FAMP	<L> [10^{30} cm^{-2} s^{-1}]	Bhabha ∫Ldt [nb^{-1}]	∫Ldt Exp, Energy	IBM/TAPE OUTPUT	At Run Start ID (μA)	TOF (V)	ON LINE REJ. SUM MIPROC T_2 %	NORD 50 T_1 & T_2	Σ Bhabha	MH	E_{Beam}	mag Field −1 × gauß	Remarks
20863	ON	ON	ON	ON	0.83	0.71	3564.89	IBM			50	57	8	0	21800	4838	
20864	"	"	"	"	2.59	8.22	3573.11	"	1.2	0.9	46	53	93	2	"	"	
20865–20867																	junk
20868	"	"	"	–	1.42	0.71	3573.82	"	0.65	0.45					"	"	Nord hang up - summary lost
20869	"	"	"	off	4.95	1.68	3575.50	IBM	1.7	1.1	35	46	79	0	21800	4.847	Run stopped to remove display hangup.
20872	"	"	"	off	4.06	12.46	3587.96	"	1.3	1.1	43	48	141	1	"	4841	
20873	"	"	"	"	2.61	9.01	3596.97	"	1.2	0.95	44	50	102	4	"	4841	
20874	"	"	"	"	2.06	7.07	3604.04	"	1.1	0.7	46	50	80	0	"	4841	
20875	"	"	"	"	1.69	5.92	3609.96	"	1.0	0.6	46	52	67	0	"	4841	
20876	"	"	"	"	1.45	7.07	3617.03	"	0.9	0.55	49	54	80	1	"	"	
20877	"	"	"	"	1.20	0.53	3617.56	"	0.8	0.48	43	56	6	0	21802	"	beams dumped
20878	"	"	"	"	3.47	8.83	3626.39	"	1.4 ~~0.65~~	1.1	42	47	100	4	21800	4840	
20879	"	"	"	"	2.31	7.77	3634.16	"	1.2	0.9	43	50	88	5	"	4841	
20880	"	"	"	"	2.30	8.13	3642.29	"	1.1	0.7	44	51	92	0	"	4840	
20881	"	"	"	"	2.62	0.44	3642.73	"	0.9	0.6	43	51	5	2	21802	4841	part of beams lost, rest dumped
20882	"	"	"	"	3.65	11.75	3654.48	"	1.0	0.7	45	50	193	3	"	"	beams dumped after partial loss
20883	"	"	"	OFF	3.26	9.98	3664.46	"	??	??	43	47	113	0	21800	4850	
20884–20885				(ON)													← junk =
20886	"	"	"	OFF	2.87	9.10	3673.56	"	1.2	1.0	45	51	103	5	"	4850	
20887	"	"	"	"	2.77	8.04	3681.60	"	1.0	0.7	47	51	91 ~~103~~	1/8	"	4850	
20888	"	"	"	"	2.35	7.77	3689.37	"	0.9	0.58	48	51	88	1	"	4850	
20889	"	"	"	–	1.93	2.47	3691.84	"	0.8	0.5	47	55	28	0	21802	4844	beams dumped.
20890	"	"	"	"	2.77	2.83	3694.67	"	0.8	0.62	51	53	32	0	21.800	4843	
20891	"	"	"	"	1.98	—	—"—	"	0.8	0.55	71	53	3	0	"	"	∇ every event bad event structure
20892	"	"	"	"	2.22	6.36	3701.03	"	"	"	50	55	72	0	"	+4842	
20893	"	"	"	"	1.67	6.54	3707.57	"	0.7	0.42	51	57	74	10	"	4840	beams dumped (Run ended just as switch off HV came in — very nice timing!)
20894	"	"	"	ON	3.77	11.66	3719.23	"	1.2	0.85	44	49	132	2	"	4841	
20895	"	"	"	"	3.30	10.95	3730.18	"	1.1	0.7	44	52	124	4	"	4841	
20896	"	"	"	"	2.92	8.66	3738.84	"	1.0	0.6	47	58	98	3	"	4840	
20897	"	"	"	"	2.59	2.21	3741.05	"	0.8	0.53	46	55	25	0	"	4840	Stopped by bad event structure and N50 crash

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 $E_{12} \geq 6$ GeV	T_2 BIT 17 2T · $E_4 \cdot \geq 2$TR

20/5/85

21:55 Start for a new run, but bad event stays constantly,
be phone Howard for advice ⟶ we then reload the p-proc-16 and restart the Nord
after that everything is fine again.

Since the start of R20890, the following message appeared.
LG HV prim. HV = 1.854 kV should be 1.870 kV, for HV. DIST = 12, 13.
Their main power supply is BARREL 7. As voltage is still drifting, so I will wait
until it will be stable.

23:23 ⟹ Adjusted HV Barrel 7 to 1.870 kV. during R20893 // E.K.

23:57 HV Barrel 7 is still drifting. now HV = 1.874 V.

21.5.85

00:00 Cartwright, Kleinwort on shift

00:15 Gas check done Disk in old drive changed from "backup B" to "system Sep. 84" C.K.

00:40 TKR lose 1nA of e^- on first ramp (to 7.030 GeV), then appear to try to go back down to injection energy to top up, and end up by losing all of both beams. (Sigh!)

1:17 New fill, and new system disc (but on old drive)
VVOLTS complains about MFR G1 channel 3 HV 1.500 should be 1.530 } Reset (?) with
G1 11 1.263 1.223 } Norsken prog
G3 1 1.500 1.510 } TOF HV

1:20 JDAS readout error 33 – missing LAM or 4 or 6 : 1 during 2

1:25 Muon crate 6 missing – reset OK

1:33 JDAS Readout error 45 – MP-16 analysis incomplete YY = 1

1:39 No Triggers – cured by PAUSE/CONTINUE

1:46 Sudden spate of JDAS errors: Missing LAM or 3 or 2 : μ-ch
System crate watchdog flag PARMS = 000002 140204
Missing LAM or 1 or 1 : VTXC × 5
Missing LAM or 2 or 3 : TOF-1
Missing LAM or 1 or 1 : VTXC
And muon crate 6 has gone missing again! HHH HHH !
Pause/continue stops JDAS errors – muon crate reset

1:56 JDAS error 46 MP-16 out of sequence YY=1

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 MIPROC T_2 %	ONLINE REJ NORD 50 T_1 & T_2 %	Σ_{Bhabha}	MH	E_{beam}	Mag. Field	Remarks

2:20 Muon crate 6 missing 10 times in last half hour (that's once every three minutes). Have twice been down to the rackside and shaken all the modules & cables – no noticeable effect first time, second time seems to have helped (touch wood).

3:00 Run 20836 stable, VTXC-thresholds ⇒ 1375 V C.K.

3:30 Muon crate 6 rears its ugly head again, after a whole hour's peace! HHH ← would not reset. Went and shook modules. (4:00)

4:05 Bad event structure – faulty port 1017 several times, followed by N50 crash.
Reload N50, try again, still bad evt structure – faulty port W10
Exit from JDAS, reload N10, try again. Works, but we forgot to switch the FAMP on – will do so next run.

4:30 All seems well now, so stop this run to turn on FAMP.

4:55 YSPY: Trigger 2 output missing : 37

5:20 Muon crate 6 missing, several times; finally unresettable in hardware room. Went and wiggled cables again. This seems to cure it for an hour or so, judging by previous efforts.

5:25 YSPY: Muon digitisers missing 67 69

5:27 Muon crate 6 missing again already. HHH

5:39 Muon crates 1, 6, 8 all missing, all reset OK. But crate 6 reappears soon after & will not reset – back to rackside!

5:42 VTXC hard, ID, ZC ~~hard~~ bin (I reached rackside just in time to reset them!)

5:45 Another JDAS error flood: missing LAM or 3 or 2 : μ-ch
System crate watchdog flag PARMS 000002 140204 } exactly same sequence
missing LAM or 1 or 1 : VTXC × 2 } as at 01:46
pause/continue stops it

Muon crate 6 goes missing. HHH

7:27 VVOLTS: LG distributor 12 primary HV 1.882 should be 1.870
13 1.882 1.870

Muon crate 6 missing

8:00 Magnusson + Matsumura
Muon Crate Missing 6 HHH

8:10 Magnet down Trip BP, ID run stopped ; we call up K

8:15 Gas check o.K.

8:46 Magnet ready again. There was no water ~~from~~ coming from the cooling pond.

9:13 YSPY error: TOF TPC No hits : 0 1

RUN | DATE | START | STOP | AT RUN START I+ I− | DEAD TIME (%) | TIME (sec) | RECORDS IN | RECORDS OUT | ALL ×10^6 | T0 REJ ×10^6 | T1 ACC SUM | T2 ACC SUM | T1 Bit 2 $E_\gamma \geq 6$ GeV | T2 BIT 17 2T. E4 · ≥2TR
Processors ON/OFF N50 MIP TOF FAMP | <L> 10^30 cm^-2 s^-1 | Bhabha ∫Ldt nb^-1 | ∫Ldt exp. energy | IBM/Tape OUTPUT | At Run Start ID (μA) TOF (V) | ONLINE REJ SUM MIPROC T2 % NORD 50 T1 & T2 % | Σ Bhabha | MH | Ebeam | Mag. Field (−1 gauss) | Remarks

Run	Date	Start	Stop	At run start I+	At run start I−	Dead Time (%)	Time (sec)	Records In	Records Out	All ×10^6	T0 Rej ×10^6	T1 Acc Sum	T2 Acc Sum	T1 Bit 2 $E_\gamma > 6$ GeV	T2 Bit 17 2T. E4 · ≥2TR	Processors ON/OFF N50	MIP	TOF	FAMP	<L> $10^{30} cm^{-2} s^{-1}$	Bhabha ∫Ldt nb^{-1}	∫Ldt exp. E_{cm} nb^{-1}	IBM/Tape Output	At run start ID (mA)	TOF (V)	Online Rej. Sum MIPROC T2	N50 T1+T2	Σ Bhabha	MH	E_{beam}	Mag Field ×(−1)	Remarks
20898	JUNK — BAD EVENT STRUCTURE																					3741.05										
20899	21.5.85	4^14	4^30	4.06	3.86	12.5	940	2319	1079	245	31	1333	1578	284	10	ON	ON	ON	OFF (circled)	2.25	3.00	3744.05	IBM	0.8	0.5	45	56	34	0	21.802	4840	Stopped to switch FAMP on
20900	"	4^31	5^33	3.93	3.73	11.5	3697	8002	3635	962	110	4816	5756	1123	19	"	"	"	ON	~~2.25~~ 1.98	6.80	3750.85	"	0.8	0.48	50	56	77	1	"	4840	
20901	"	5^35	6^02	3.49	3.32	11.7	1373	2906	1360	358	42	1807	1985	415	5	"	"	"	"	1.67	1.94	3752.79	"	0.6	0.4	51	55	22	0	"	4858	Beams dumped
20902	"	7:25	8:15	4.52	4.47	13.0	2930	6701	3328	763	99	3794	4841	791	19	"	"	"	"	2.76	6.80	3759.59	"	0.9	0.65	46	52	77	3	"	4838	
20903	"	8:49	9:53	3.82	3.79	16.5	3785	8002	3709	985	162	4538	5819	1010	23	"	"	"	"	2.30	8.66	3768.25	"	0.9	0.5	46	55	98	1	21.800	4847	
20904	"	9:54	10:15	3.36	3.23	11.4	1227	2670	1205	319	36	1575	1928	346	10	"	"	"	"	2.14	2.21	3770.46	"	0.4	0.8	49	57	25	1	"	4848	Beams dumped
20905	"	12:08	13:02	4.39	4.46	12.6	3154	7312	3721	821	103	4120	5278	910	26	"	"	"	"	3.30	9.63	3780.09	"	1.0	0.62	46	51	109	4	"	4853	
20906	"	13:08	14:25	3.83	3.81	13.2	2828	6385	2916	736	97	3819	4370	833	20	"	"	"	"	2.16	4.33	3784.42	"	0.9	0.6	48	56	49	3	"	4855	beams lost
20907	"	16:40	17:34	4.59	4.63	14.0	3187	8001	4206	830	116	4481	5661	1028	36	"	"	"	"	3.54	11.31	3795.73	"	1.0	1.2	45	49	128	2	"	4844	
20908	"	17:34	18:33	4.06	4.09	14.6	3411	8002	3999	888	129	4738	5600	1075	33	"	"	"	"	2.78	7.95	3803.68	"	0.8	0.6	48	52	90	2	21.802	4844	
20909 + 20910	lost because of NORD problems.																							~~0.7~~	~~0.5~~							runs lost
20911	"	18:39	18:44	3.52	3.55	12.2	214	573	274	56	7	340	352	83	2	"	"	"	OFF (circled)	2.38	0.44	3804.32	"	0.7	0.5	45	55	5	0	21.800	4844	run stopped to start FAMP
20912	"	18:44	19:26	3.48	3.51	11.8	2461	5487	2583	640	76	3280	3884	728	15	"	"	"	ON	2.17	3.98	3808.30	"	0.7	0.5	49	55	45	2	"	"	beams dumped
20913	22/5/85	1.32	2.23	5.64	5.80	16.9	3065	8002	4287	797	134	4364	5939	1004	28	"	"	"	"	4.46	13.87	3822.17	"	1.2	0.9	45	48	157	3	"	4841	
20914	"	2.24	3.17	4.85	5.09	15.6	3154	8002	4359	820	128	4507	5710	1041	31	"	"	"	"	3.93	11.13	3833.30	"	1.0	0.7	45	47	126	5	"	"	
20915	"	3.18	4.12	4.25	4.49	14.4	3270	8001	4051	850	122	4625	5761	997	23	"	"	"	"	3.07	9.81	3843.11	"	0.9	0.6	47	51	111	2	"	"	
20916	"	4.13	5.05	3.76	3.99	12.1	3099	7080	3390	806	98	4171	5074	880	25	"	"	"	"	2.51	8.66	3851.77	"	0.8	0.5	48	54	98	0	"	4842	Beams dumped
20917	23/5/85	22^07	22^13					328	177	IRREGAL JET CHAMBER DATA, so RUN stopped														1.0								Beams lost
20918	24/5/85	0^50	0^50	4.49	4.22			57	31.							ON	ON	ON	OFF													FAMP OFF → ON, then start next Run
20919	"	0^52	1^49	4.47	4.20	13.5	3417	8001	3973	889	120	4550	5702	1050	32	"	"	"	ON	3.38	10.51	3862.28	"	?	?	47	52	119	1	21.800	4852	
20920	"	1^49	2^49	3.94	3.69	13.3	3536	8001	3767	920	123	4673	5661	1085	26	"	"	"	"	3.12	9.19	3871.47	"	0.8	0.45	48	55	104	3	"	4853	
20921	"	2^49	3^20	3.45	3.03	11.4	1844	3947	1773	480	55	2423	2714	574	14	"	"	"	"	2.74	4.51	3875.98	"	0.6	0.42	49	57	51	0	"	4852	Beams dumped.
20922	"	4^05	4^57	5.10	5.13	17.0	2890	8000	4276	753	128	4360	5484	1083	19	"	"	"	"	4.96	12.90	3888.88	"		0.9	42	48	146	3	"	4852	
20923	"	4^57	5^51	4.53	3.92	13.7	3202	8002	3966	833	114	4627	5557	1110	40	"	"	"	"	3.96	10.43	3899.31	"	1.0	0.8	47	52	118	3	21.802	4852	
20924	"	5^51	6^14	3.90	3.35	13.0	1366	3149	1528	355	46	1853	2185	429	9	"	"	"	"	3.01	4.51	3903.82	"	0.8	0.5	48	53	51	1	21.802	4853	
20925	"	6^16	7^17	3.67	3.13	11.6	3632	8002	3809	945	109	4753	5683	1099	36	"	"	"	"	2.71	9.10	3912.92	"	0.7	0.45	48	54	103	2	"	"	Beams dumped
20926	"	8:31	9:05	5.64	5.73	19.7	2151	6186	3276	560	40	3286	4171	257	21	"	"	"	"	4.44	8.57	3921.49	"	1.4	1.0	40	49	97	2	21.800	"	Run stop
20927	"	9:10	9:14	5.04	4.41	34.5	135	308	220	35	12	204	212	33	4	"	"	"	"	3.33	0.27	3921.76	"	1.2	0.75	28	47	3	0	"	"	} no trigger causes new run
20928	"	9:15	9:16	4.91	4.28	21.1	~~354~~	276 ~~301~~	160	22	5	141	149	39	2	"	"	"	"	3.48	0.27	3921.94	"	1.2	0.75	29	46	3	0	"	"	
20929	"	9:18	9:20	4.92	4.20	16.8	62	223	119	16	3	123	110	23	2	"	"	"	"	3.67	0.09	3922.03	"	1.2	0.7	32	52	1	0	"	"	
20930	"	9:21	9:27	4.88	4.15	16.6	332	834	504	84	14	520	623	134	5	"	"	"	"	4.18	1.77	3923.80	"	1.1	0.7	43	48	20	0	"	"	
20931	"	9:28	10:20	4.76	4.00	16.4	3072	8002	4148	669	131	4583	5416	1104	27	"	"	"	"	4.12	11.83	3935.73	"	1.1	0.65	44	50	135	5	"	4850	
20932	"	10:20	11:03	3.98	11:03	12.9	2507	6000	3023	653	84	3626	4116	788	19	"	"	"	"	3.20	7.33	3943.06	"	0.7	0.5	49	51	83	1	"	4845	beams lost

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 $E_z > 6$ GeV	T_2 BIT 17 2T · $E_t > 2$TR

Standard histograms now 1 page shorter :- a muon histogram has been removed (repeat of hit map with MAX-Y-cut) so that the now 3 Muon histograms fit onto 1 page rather than 4 onto two ---.
YMAGNT set to run every minute rather than every 15 seconds - was set to 15secs when power supply was unstabilised. (HEM)

12:08 New fill ready
12:26 DAS READOUT ERROR 45 - FTP-16 analysis incomplete ; YY = 1
13:10 IBM Link down for ≈ 45 minutes
16:00 MIDDLETON ≠ J. WAGNER ON SHIFT
16:40 new fill ready.
17:40 gas check done.
18:35 Nord 50 died ~~of~~ no trigger message. solved by booting NORD 10.
n.b. this occurred right at end of run. — really the Nord-50?
18:45 re-start FAMP and a new run.
19:30 beam dumped.
22^{06} CALL PKR → SYNCHROTRON PROBLEMS, ~½ HOUR TO FIX.
22^{50} no beam before 23:45 magnet ~~down to~~ 1500

22.5.85

0.00 Dieckmann & Nye on shift
0.70 Gas check done

8.00 Bartel & Kawagoe on shift
7.30 Beam until 23.05. 15^{20}
switch off magnet
8:00 gas check done

leave counting house checks will be done at regular intervals (~2 hrs)

11:00 Magnet has to stay off — pumps are switched off

13^{00} The Blue drive has now a fresh copy of the system disc and is left as system disk drive to see whether transfer errors occur again. Beware that program changes may be lost later!

J. O.

Processors ON/OFF N50	MIP	TOF	FAMP	<L> 10^{30}/cm²sec	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 MIPROC T_2 %	ONLINE REJ NORD 50 T_1 & T_2 %	Σ_{Bhabha}	MH	E_{beam}	Mag. Field −1.x gauss	Remarks

23.5.85

1^{00} gas check done (& Middleditch).
7^{25} ok (w Bartel)

8^{00} Bethke, Schmidtobl
8^{30} Gas-check done
9^{20} Test disk still left in the blue drive, still no error ... J.O.
17^{50} tried to phone TASSO and to asked for duration of shutdown, but nobody seems to be there ... phoned PKR: they have no new information, but certainly no restart before 15^{00}.

16:00 Dieckmann + Heintzelmann
16:10 TASSO is ready
18:02 Magnet current to 7500 A
22:13 Ill. fetchamber data, DL8-problems 23:00 beams lost 23:00 – 1:00 DL8-184 exchanged and power supply exchanged
$24\,5\,0^{00}$ Kawagoe & Haidt on shift
1^{20} Gas Check Done.
4^{50} I.D. head ship
6^{14} "No events for ... seconds" pause/continue didn't help. stop and restart new Run.
7^{20} beams dumped. MARK J asked to get access to their experiment for 10 minutes.

8^{00} Chrin + Schmicott on shift.
8^{20} Gas check done
8^{30} Jan Olsson Telephoned → he says his phone is dead !! and therfore we are unable to reach him until his phone is repaired (Jan hopes this will be dog done by early afternoon — he will ring once the dead is done).
9^{10} IBM transfer error : 000054 SUBERR 000000 ERR.CNT 0002. No triggers. We have to start a new run
9^{45} no trigger causes to start a new run (20927 – 20930)
10^{10} : The IBM transfer error shows up frequently (~all 5 minutes) So I called FSB but no obvious error was to be seen.
10^{30} : Jan Olsson: telephone works again.
11^{05} Beams lost
11^{30} Short break appears on screen. PKR has problems with computers.

13^{30} IBM link problems cured. Using the IBM link test program with Herr Delks we found that repeat transfers to the multiplexor would give error 54. (CRC errors). In one of the multiplex headers a twisted pair receiver was exchanged and problems cured. There was no need to change IBIT program.
HEM

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 $E_1 \geq 6$ GeV	T_2 BIT 17 $2T \cdot E_4 \cdot \geq 2$ TR

13^{30} vertex chamber HV at 1415.0 V
14^{30} no IBH transfer ever in 1 hour.

14^{42} Vertex chamber hard trip.
14^{48} Vertexchamber hard trip and Ramcke called
15^{03} " " " section 2
15^{06} " " " section 2
15^{12} " " " section 2; HV now at 1400 V
16^{04} " " "

16^{00} Stephan & Schneekloth.
16^{15} Gas OK.

To shift crews: please switch the VTXC on, reset single trips.
If the chamber trips often in a short time intervall (eg. 10/h)
then call VTXC-expert (even at night) HK

JOAS ERROR 33 - missing LAM branch 2 crate 3 - TOF 1 counter
" " " " " 1 " 1 " "
" " " " 1 " 1 beam pipe chamber
" " " " " 4 " 6 I.D. ring 2

16^{50} no triggers, pause - continue didn't help, started new RUN (20937), everything O.K.

JOAS ERROR 33 - missing LAM branch 4 crate 6 ID ring 2

17^{52} new fill ready, started RUN 20938
19^{10} beams lost, VTX CH tripped
19^{40} new fill, started RUN 20941
20^{26} no triggers, pause-continue didn't help, started new RUN, O.K.
21^{03} " " " "
21^{27} " " " "

29.5.85

0.00 Hellenbrandt & Magnussen
0.10 Gas check done
0:20 Run 20946 NO EVENTS FOR — SECONDS, PAUSE/CONTINUE did not help, Run stopped and next one started

Processors ON/OFF N50	MIP	TOF	FAMP	<L> 10^{30}/cm²s	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 MIPROC T_2 %	ONLINE REJ NORD 50 T_1 & T_2 %	Σ_{Bhabha}	MH	E_{beam}	Mag. Field −1.+gauss	Remarks

2:47 part of the beams lost, VTR CH tripped

8.00 Cartwright & Ramcke on shift
8^{15} Gas check done. (Note: ethane pressure very low)
8^{22} "Run summary printing" — but it wasn't. Switched Gould plotter on/off and got a nasty pale grey run summary. Used "get-old-run-summary" to get a second decent copy.

From run 20954 vtx chr voltage set to 1400 V

8^{31} JOAS error 33: missing LAM br 2 cr 4 — TOF2 ctr
9^{02} JOAS error 45: MP16 analysis incomplete YY=1

Phoned Peter Warming about low ethane pressure — he says he will come and look at it.

9^{12} Trying to provide FAMP printout as requested by Lauikainen, get ERROR IN FAMP TRANSFER & no info. (40) Called Jan Olsson. He says, switch FAMP off and call me in 20 min (he was DATEX-P linked to computer - phone permanently engaged!)
9^{34} Vtx chr voltage increased to 1450 V run 20955 event ~8346

10^{05} On instructions from Jan Olsson, reloaded FAMP according to instructions in JOAS manual. Then tried INIO again. Result — instead of previous ERROR IN SLAVE 1, now ERROR IN SLAVE 3. Reported to Jan, he says leave FAMP OFF for the time being since only Laurikainen is likely to be able to find the bug.

10^{58} First run of new fill, vtx chr voltage → 1475 V (OPERATING LEVEL!)
11^{xx} JOAS READOUT ERROR 74 wrong LAM br 1 cr 1 RUN 20957 VTXC normal data taking!

11^{15} Argon Ethane changed over by Peter Warming. Vertex chamber soft trip.
11^{20} Vtx chr soft trip; followed by hard trip as soon as the chamber reached operating voltage again. PWR are trying to help.
When vertex chr re-enters readout, WRONG LAM BR 1 CR 1 message appears.
11^{35} MP-16 out of sequence; YY=1
11^{40} VTXC s/t trip
11^{49} JOAS error 33 - missing LAM br 2 cr 4: TOF 2
11^{00} 45 MP16 analysis incomplete: YY=1 again 1360

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 $E_0 > 6$ GeV	T_2 BIT 17 2T $E_4 \geq 2TR$
20933	24/5/85	13:30	14:26	4.55	4.71	12.9	3341	8002	4106	871	112	4712	5405	930	32
20934	"	14:26	15:36	3,76	4,10	12.1	3545	8002	3828	924	111	4923	5438	1028	31
20935	"	15:36	16:41	2.64	2.86	123	3848	8002	3763	1002	123	5018	5494	1135	30
20936	"	16 41	16^{52}	2.63	2.85	11.2	620	1374	613	161	18	877	852	192	7
20937	"	16 53	17 17	2.55	2.78	11.9	1401	2863	1307	364	43	1815	1976	400	4
20938	"	17^{52}	18^{42}	5.49	5.88	18.2	2915	8002	4381	758	138	4549	5561	1162	34
20939	"	18^{41}	19^{05}	4.49	4.65	15.8	1334	3606	1971	347	55	2146	2442	539	18
20940	"	19^{06}	19^{11}	4.06	4.25	14.7	269	742	417	70	10	460	494	124	2
20941	"	19^{40}	20^{26}	5.72	5.82	21.2	2765	8002	4702	720	153	4642	5381	1240	36
20942	"	20^{27}	2103	4.66	4.30	16.5	2129	5706	3138	554	91	3402	3901	850	15
20943	"	2104	2127	4.08	3.72	16.9	1345	3345	1780	350	59	2048	2291	537	18
20944	"	21^{28}	22^{16}	3.23	2.91	13.5	2867	7079	3639	746	101	4372	4772	1105	29
20945	"	2244	23^{33}	5.62	5.62	28.9	2834	8002	4740	737	213	4485	5573	1200	43
20946	"	23^{34}	0:20	4.74	4.42	22.9	2729	7647	4479	710	162	4542	5287	1189	32
20947	25/05/85	0:22	0:57	4.03	3.71	18.3	2059	5811	3280	536	98	3450	3966	909	25
20948	25/05/85	1:24	2:10	5.63	6.08	29.9	2661	8002	4919	693	207	4411	5554	1215	42
20949	"	2:10	2:48	4.74	5.10	21.1	2120	6550	3955	551	149	3747	4607	1100	38
20950	25/05/85	4:49	5:44	5.49	4.12	13.7	3224	8002	4226	839	115	4626	5736	~~1065~~	26
20951	"	5:45	6:34	4.84	3.57	15.4	2997	8002	4325	779	120	4848	5520	1201	39
20952	"	6:36	6:59	4.20	3.06	14.2	1395	3700	1952	363	51	2330	2501	583	14
20953	"	7^{33}	8^{22}	3.72	5.59	17.9	2927	8002	4511	762	137	4671	5517	1196	39
20954	"	8^{23}	9^{12}	3.17	4.93	16.5	2938	8002	4494	765	126	4720	5483	1228	34
20955	"	9^{13}	9^{41}	2.71	4.30	14.0	1617	4232	2270	421	59	2547	2955	652	19
20956	"	9^{41}	10^{06}	2.50	4.01	13.4	1465	3735	1913	379	51	2296	2495	551	16
20957	"	10^{58}	11^{45}	5.79	5.92	17.7	2716	8001	4597	707	125	4535	5392	1213	34
20958	"	11^{45}	12^{44}	5.02	5.00	21.8	2219	6902	4076	578	126	3948	4552	1097	26
20959	"	13^{25}	13^{42}	4.02	6.00	14.9	947	2547	1421	246	37	1436	1746	339	16
20960	"	14^{19}	15^{11}	5.42	5.61	19.6	2631	8002	4860	685	135	4596	5375	1243	42
20961	"	15^{13}	15^{56}	4.55	4.57	21.8	2573	8002	4701	669	146	4776	5178	1347	40
20962	"	15^{56}	16^{46}	3.82	3.84	15.7	2834	7923	5558	737	116	4865	5152	1341	35
20963	"	17^{47}	18^{37}	5.26	5.35	18.6	2694	8001	6126	701	130	4429	5512	1192	36
20964	"	18^{40}	19^{24}	4.33	4.11	16.7	2637	7666	5824	686	114	4505	5119	1209	37
20965	"	21^{53}	22^{47}	4.66	4.81	13.3	3133	8001	5988	816	109	4489	5703	1097	29
20966	"	22^{47}	23^{45}	3.90	4.18	12.1	3462	8002	5962	901	108	4954	5361	1283	16
20967	"	23^{45}	0:36	3.19	3.61	12.1	2987	6963	5010	777	93	4345	4494	1214	20

RUN	Processors ON/OFF N50	MIP	TOF	FAMP	<L> 10^{30} $cm^{-2}s^{-1}$	Bhabha ∫Ldt nb^{-1}	∫Ldt Exp, energy	IBM/TAPE OUTPUT	AT Run Start ID (μA)	TOF (V)	ONLINE REJ SUM MIPROC T_2 %	NORD 50 T_1 & T_2 %	Σ_{Bhabha}	MH	E_{Beam}	Mag Field	Remarks
20933	ON	ON	ON	ON	4,69	15,11	3858.17	IBM	0.8	0.55	46	50	171	4	21.800	4841	
20934	"	"	"	"	3,45	10,07	3868.24	"	0.8	0.45	50	52	114	3	"	4841	
20935	"	"	"	"	2.36	7,69	3975.93	"	0.6	0.4	51	54	87	2	"	"	
20936	"	"	"	"	1.67	1.33	3977.26	"	0.5	0.4	48	58	15	–	"	4.844	
20937	"	"	"	"	1.53	2.56	3979.82	"	0.4	0.4	53	56	29	3	"	"	beams dumped
20938	"	"	"	"	4.63	13.34	3993.16	"	1.2	1,2	44	47	151	3	"	"	
20939	"	"	"	"	4.03	~~5.3~~ 4.68	3997,84	"	0.9	0.74	46	47	53	1	"	"	
20940	"	"	"	"	3.62	1.15	3998,99	"	0.8	0.7	50	46	13	0	"	"	beams lost
20941	"	"	"	"	5.19	13.87	4012.86	"	1.2	1.3	45	43	157	6	"	4.841	
20942	"	"	"	"	3.98	7.24	4020,10	"	0.9	0.75	46	47	82	0	"	"	
20943	"	"	"	"	2.75	4.42	4024,52	"	0.8	0.7	49	48	50	1	"	"	
20944	"	"	"	"	2.50	6.45	4030.97	"	0.8	0.6	49	50	73	4	"	"	beams dumped
20945	"	"	"	"	3.42	8.39	4039.36	"	1.2	1.2	44	43	95	1	"	"	
20946	"	"	"	"	2.73	6.54	4045.91	"	1.0	1.0	48	43	76	1	21.800	4.840	
20947	"	"	"	"	2.25	4.51	4050.42	"	0.8	0.8	47	45	51	0	"	4.840	beams dumped
20948	on	on	on	on	4.06	10.25	4060.67	IBM	1.2	1.3	43	40	116	4	21.800	4.840	
20949	"	"	"	"	3.08	6.54	4067.21	"	0.9	1.2	46	41	74	1	"	4841	beams lost
20950	on	on	on	on	3.64	9.28	4076.49	IBM	0.9	0.7	46	49	105	1	21.800	4.840	
20951	"	"	"	"	2.73	6.10	4082.59	"	0.8	0.7	49	48	69	3	"	4839	
20952	"	"	"	"	2.07	3.09	4085.68	"	0.7	0.7	50	49	35	1	21.800	4.838	beams dumped
20953	"	"	"	"	2.85	7.69	4093.37	"	1.0	0.8	46	45	87	2	21.802	4838	
20954	"	"	"	"	2.41	6.18	4099.55	"	0.8	0.85	47	46	70	4	"	4841	VTXC 1400V
20955	"	"	"	"	1.89	3.09	4102.64	"	0.7	0.7	49	48	35	1	"	4840	Stopped to switch off FAMP
20956	"	"	"	OFF	1.75	2.21	4104.85	"	0.65	0.65	49	51	25	1	"	4844	Beams lost VTXC 1450V
20957	"	"	"	"	4.72	12.54	4117.89	"	1.2	0.95	43	44	142	3	"	4844	VTXC normal data taking !!
20958	"	"	"	"	8.51	8.83	4126.22	"	1.0	1.0	45	43	100	1	"	4845	Beams lost
20959	"	"	"	"	4.02	3.53	4129.75	"	1.0	0.8	45	46	40	1	"	4846	Beams lost
20960	"	"	"	"	4.22	11.49	4141.24	"	1.0	1.0	45	41	130	2	"	4847	
20961	"	"	"	"	3.41	7.51	4148.75	"	0.95	1.05	47	43	85	5	"	4848	N50 red. / low due
20962	"	"	"	"	3.01	7.86	4156.61	"			48	31	89	2	"	"	beamslost to Argon filler gas
20963	"	"	"	"	3.63	11.04	4167.65	"	1.1	1.3	44	24	125	2	"	"	↑
20964	"	"	"	"	2.96	5.04	4172.69	"	0.9	0.8	47	25	57	3	"	"	(VTX 1425 V for last 1000 triggers)
20965	"	"	"	"	4.30	12.02	4184.71	"	1.1	1.7	45	26	136	2	"	4840	beams lost
20966	"	"	"	"	3.18	11.75	4196.46	"	.55	0.9	49	26	133	1	"	"	
20967	"	"	"	"	2.56	7.95	4205.41	"			48	29	90	1	"	4839	beams dumped

RUN	DATE	START	STOP	AT RUN START I^+	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 $E_{LG} \geq 6GeV$	T_2 BIT 17 $2T \cdot E_4 \cdot \geq 2TR$

12^{23} beams lost: VTX hard trip, then ID hard-tripped while running down
13^{42} beams lost: " " ", ID soft trip

14^{20} Two vertex-chamber hard trips (? — vertex chamber people in rucksack, so maybe some voltage changing going on)

14^{30} Z-ch trip. Probably a result of the chamber getting bad gas (low ethane) for a couple of hours, due to Warming and I fouling up the gas changeover!

15^{50} increasing number of spikes in the muon filter hit map.
probably due to the chambers having had bad gas for some while.
→ voltages reduced for all chambers. We have to wait a few hours and get back to normal then hopefully.

PWA

16^{00} Saturday 25^{th} May   H. Mills + K. Kleinwort

All's well except.... unknown gas mixture in Muon chambers + Z chamber (now feeling better)
FAMP OFF until P.L. back from hols - turned power off to reduce audio noise.

Muon chambers taken out of the histogram SPY check.

16^{45} Beampipe chamber trips - beams unstable - PETRA orders new fill. ID trips
// VTXC Anode Peak-Current is sent to PKR, ID-Signal is disconnected // C.K.
The low N50 rejection % in recent runs (~20962) due to Muon Filter being off/low and hence rejection of JO & JO2 cosmics is rare!

18^{30} Bad beam condition → VTXC - Softtrips, ask for optimization (→ last ~1000 Trigger Anode voltage 1425V in VTXC)

19^{24} beams lost, hard trip in VTXC, ID, Z-C (Spark-Alarm in ID, called experts Spitzer, Komamiya, Kellenberger)

22^{00} JDAS Readout Error 33 - Missing LAM B2 C4 : TOF2
" " " 45 - MP-16 Analysis incomplete YY=1

22^{50} On request from Peter Warming the ethane gas was turned up from 17.5 cms to 19.0 cms.
23^{15} → back to 17.1 cm. (Kris beginning to approach normal value).
↑ This was Jan Chrin ↑

Processors ON/OFF N50	MIP	TOF	FAMP	<L> $10^{30}cm^{-2}s^{-1}$	Bhabha $\int Ldt$ nb^{-1}	$\int Ldt$ EXP, energy	IBM/Tape OUTPUT	At Run Start ID (μA)	TOF (V)	ONLINE REJ SUB MIPROC T_2 %	NORD 50 T_1 & T_2 %	Σ Bhabha	MH	E_{beam}	Mag. Field	Remarks

23^{15} JDAS Readout Error 33 - Missing Lam Br 4 Cr 6 : ID Ring 2
23^{30} VTXC - Softtrip

Don't worry about the 'JDUMP ACTIVE' message that appears under the IBM DISC % whilst the dump job is in! (HEM)

0^{00} Stephens Spitzer
Gas check OK
Have raised μ chamber to correct voltage. Gas mixture is getting closer to normal. However it may be a while before μ system returns to full efficiency. KS

2^{15} mu chamber histograms looking reasonable.

5^{30} Alarm from CAMAC power supply in rack 4 — bottom unit. 6 V line drops to zero when alarm comes on. As there is no beam we leave supply switched off (perhaps it will cool down) and wait.

6^{45} Power supply comes on (and hopefully will stay on)

Started to do Histograms in Run # 20973 but Gould decided not to cooperate half way through. Visually the histograms look OK. Gould now back in operation.

VTXC has given quite a few soft trips during the night but in this latest fill it became a bit excessive. Ramcke called (phone) in about 7^{30} suggests that if situation doesn't improve call the VTXC expert in. Ramcke will be in in 1-2 hrs time. On the alarm interrupt register it has always been Eight! that shows

800 Hughes + Komamiya

8^{09} Gas Check [illegible]
8^{30} Magnet [illegible] ⇒ 300 A

RUN | DATE | START | STOP | AT RUN START I+ I− | DEAD TIME (%) | TIME (sec) | RECORDS IN | RECORDS OUT | ALL *10^6 | T0 REJ *10^6 | T1 ACC SUM | T2 ACC SUM | T1 Bit2 E>6GeV | T2 BIT 17 2T·E4≥2TR | Processors ON/OFF N50 MIP TOF FAMP | <L> 10^30 cm^-2 s^-1 | Bhabha ∫Ldt nb^-1 | ∫Ldt Exp, energy | IBM/Tape OUTPUT | At Run Start ID (μA) TOF (V) | ONLINE REJ SUM MIPROC T2 % NORD 50 T1 & T2 % | Σ Bhabha | MH | E beam | Mag. Field −1*gauss | Remarks

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 $E_{LG} > 6$ GeV	T_2 BIT 17 $2T \cdot E_4 \geq 2TR$	PROCESSORS ON/OFF N50	MIP	TOF	FAMP	$\langle L \rangle$ 10^{30} cm^{-2}s^{-1}	Bhabha $\int Ldt$ nb^{-1}	$\int Ldt$ EXP, ENERGY	IBM/Tape OUTPUT	At run start ID (μA)	TOF (V)	ONLINE REJ. SUM MIPROC T_2 (%)	NORD 50 T_1 & T_2 (%)	Σ_{Bhabha}	MH	E_{beam}	Mag. field −1*gauss	REMARKS
20968	26/5/85			5.68	5.88			NO EVENTS								ON	ON	ON	OFF			4205.31	I BM	1.4	1.4					21.800		beams lost immediately.
20969	"							NO EVENTS					BR counte			"	"	"	"				"	1.4	1.5							
20970	"	1^{39}	2^{30}	4.93	4.97	15.1	2798	8002	4312	728	110	4519	5511	1271	35	"	"	"	"	4.07	10.78	4215.19	"	1.2	1.4	45	48	122	3	"	−4838	NB NORD 50 rej back up to more usual level ??? chamber on.
20971	"	~~1^{39}~~ 2^{30}	~~2^{30}~~ 3^{21}	4.12	4.76	13.2	2872	8002	4149	747	99	4740	5302	1332	29	"	"	"	"	3.23	8.92	4224.11	"	1.0	0.8	45	50	101	4	"	−4837	
20972	"	3^{21}	4^{04}	3.52	4.13	13.4	2524	6624	3390	657	88	4083	4302	1151	28	"	"	"	"	2.66	5.48	4229.59	"	0.8	0.6	48	51	62	3	"	−4837	
20973	"	6^{50}	7^{34}	5.80	5.86	16.4	2587	8002	4732	673	110	4400	5677	1181	34	"	"	"	"	4.98	12.63	4242.22	"	1.4	1.2	42	42	143	2	"	−4837	
20974	"					NO EVENTS				VTXC		NOT AT		VOLTAGE										1.1	1.0							
20975	"	7^{37}	7^{49}	4.86	5.06	16.8	660	2049	1184	172	29	1183	1379	330	8	"	"	"	"	4.24	2.56	4244.78	"	1.1	1.0	45	44	29	0	"	−4838	beams lost.
20976	"	19^{10}	19^{50}	3.13	3.59	11.6	2355	5157	2477	613	72	3002	3706	757	17	"	"	"	"	1.83	4.01	4248.79	"	0.8	~2.0	50	54	56	1	"	−4842	
20977	"	20:01	20:23	2.68	3.10	11.2	1331	2791	1257	346	39	1728	1935	451	7	"	"	"	"	1.74	2.31	4251.10	"	?	?	52	57	21	1	"	−4842	beam lost
20978	"	21:44	22:43	3.52	4.67	13.4	3504	8002	3811	911	113	4725	5566	1220	20	"	"	"	"	2.54	8.90	4260.00	"	0.8	0.7	48	54	86	3	"	−4844	
20979	"	22:44	23:23	2.92	4.11	12.3	2330	5090	2208	606	74	3021	3603	847	14.	"	"	"	"	1.96	4.56	4264.56	"	0.8	0.5	48	58	46	0	"	−4844	beam lost
20980	27.5.85	0.23	1.12	5.50	5.83	16.3	2846	8001	4155	741	121	4313	5570	1252	31	"	"	"	"	4.07	10.43	4274.99	"	1.2	1.1	44	50	118	1	"	−4844	~~[illegible]~~
20981	"	1:12	1:15	4.47	4.85	13.7	136	436	227	35	5	232	245	86	4	"	"	"	"	3.27	0.80	4275.79	"	"	"	35	52	9	0	"	−4844	beam lost
20982	"	1:55	3:00	5.39	5.90	26.3	3059	8002	4370	796	209	4448	5574	1329	32	"	"	"	"	3.52	9.63	4285.42	"	1.3	1.3	44	47	109	1	"	−4842	
20983	"	3:01	3:51	4.17	4.44	15.1	2960	8001	4146	770	116	4692	5426	1473	27	"	"	"	"	2.63	8.13	4293.55	"	1.0	0.8	48	50	92	1	"	−4841	
20984	"	3:51	4:27	3.49	3.62	13.6	2141	5510	2597	557	76	3322	3705	1028	17	"	"	"	"	1.97	5.04	4298.59	"	0.8	0.65	49	55	57	4	"	−4841	beams dumped
20985	"	6:14	6:32	5.58	5.86	14.5	923	2461	1168	240	35	1169	1951	321	16	"	"	"	"	0.56	0.18	4298.77	"	1.4	1.8	42	55	2	0	"	−4840	beams dumped (bad lumi)
20986	"	8^{06}					131																		0.9							VTX.Ch. HV off
20987	"	8.09	9.02	4.95	5.64	~~2936~~ 13.8	2936	8001	4012	764	106	4343	5704	1235	28	"	"	"	"	3.14	6.71	4305,48	"	1.1	0.8	43	52	76	2	"	4841	
20988	"	9.02	9.29	4.12	4.88	13.6	1269	3407	1712	331	45	1983	2337	607	10	"	"	"	"	2.67	3.89	4309,37	"	1.1	0.7	47	52	44	2	"	"	beams lost
20989	"	10^{25}	10^{58}	5.61	6.06	19.0	1924	5634	2984	501	95	2870	4248	926	24	"	"	"	"	2.73	4.95	4314.32	"	1.5	2.0	42	49	56	1	"	4843	VTX Ch. HV changed to 1450V, beam lost
20993	"	16 18	16 25	4.05	4.72	13.5	365	786	644	95	13	407	701	100	4	"	"	"	"	1.37	0.35	4314.67	"	1.1	0.9	53	50	4	0	"	4842	20990 ~ 992 Junk beam lost
20994	28.5.85	5.38	5.54	2.65	1.54	12.5	908	1580	665	235	29	1015	1116	242	6	"	"	"	"	0.67	0.35	4315.02	"	0.2	0.3	55	60	4	0	"	4842	
20995	28.5.85	6.27	7.10	1.46	1.52	9.1	2577	4572	1702	670	61	3060	3039	939	11	"	"	"	"	0.36	0.92	4315.94	"	0.2	0.24	55	64	13	0	"	4834	
20996	"	7.54	8.00	4.59	4.72	13.5	321	871	380	83	11	~~1032~~ 476	576	149	1	"	"	"	"	3.25	0.88	4316.82	"	1.2	0.7	43	60	10	1	"	4837	Beams lost
20997	"	12^{43}	12^{54}	3.10	3.80	11.5	638	1521	667	166	19	947	940	320	3	"	"	"	"	1.87	1.24	4318.06	"			38	58	14	0	"	4841	Beam lost
20998	} no events																															
20999	}																															
21000	}																															
21001	28.5.85	15.26	15.38	4.00	4.37	12.9	699	1854	927	182	24	1195	1063	394	5	ON	ON	OFF	OFF	2.40	1.54	4320.00		1.0	1.0	48	52	22	0	"	4841	Beams lost
21003	28.5.85	20.58	21.04	2.43	3.99	11.2	276									"	"	OFF	OFF		0.71	4320.71		0.8	0.8							Beam dumped HV(VTXC) = 1450
21005	"	22^{58}	23.20	5.58	6.00	17.9	1254	3928	2122	326	58	2217	2392	727	17	"	"	OFF	OFF	3.47	3.53	4324.24	"	1.4	1.5	41	48	40	3	"	4837	"
21006	"	23.41	23.59	4.53	5.28	16.9	1027	3176	2958	267	45	1729	1955	598	8	"	"	OFF	OFF	3.38	2.92	4327.16	"	1.3	1.0	39	51	33	1	"	4838	HV (VTXC) = 1475

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	T₂ BIT 17

16:00 Bartel & Kawagoe on shift

Visit to the PKR: The bad performance of Petra over the last 8 hours is due to a series of smaller faults: PADAC system failed, injection system collapsed, DESY has difficulties to deliver beam. Petra cooled down and injection becomes increasingly more difficult as time goes by.

16 30 Gas check done

19 02 Beams ready HIGH TOF RATE ⇝ BACKGROUND OPTIMIZATION

19 16 TSM { TRIGGER 1 input missing 106
——— 1 output ——— 56

they are due to the Barrel Group 25 of LG linear Sum Last stage.
The module for BG22 - 22 was replaced.
Test Run ⟶ seems O.K.

27/5/85 0⁰⁰ Dieckmann + Hagemann on shift

0 20 Gas check done

0 34 JOAS READOUT ERROR 46 - MP 16 out of sequence; YY=1

0 38 " " " 33 - missing LAM board 3 crate 4 : E-chamb part 1
" " " " - " " " 2 " 3 : TOF 1 counters
" " " " - " " " 2 " 3 : "
" " " " " " " 2 " 3 : "

⇒ PAUSE → CONTINUE ⇒ o.k.

0 42 JOAS READOUT ERROR 45 - MP 16 analysis incomplete; YY=1

0 49 " " " 46 - MP 16 out of sequence; YY=1

2 36 " " " 33 - missing LAM b3 c2 : Muon chambers
" " " 53 - System crate watchdog flag PARMS = 000002 140204
" " " 33 - missing LAM b1 c1 : BPCH

⇒ PAUSE → CONTINUE ⇒ o.k.

4 08 JOAS READOUT ERROR 33 - missing LAM 64 c6 : ID ring 2

Processors ON/OFF N50	MIP	TOF	FAMP	<L> 10³⁰ cm⁻²sec⁻¹	Bhabha ∫Ldt nb⁻¹	∫Ldt EXP. energy	IBM/Tape OUTPUT	At Run Start ID (μA)	At Run Start TOF (V)	ONLINE REJ MIPROC T₂ %	ONLINE REJ NORD 50 T₁ & T₂ %	Σ Bhabha	MH	E beam	Mag. Field −1 equiv	Remarks

8.00 Naroska + Schreiber

8.27 Gas-check started, done

BP-chamber trip + ID trip (without reasons, may be soft?)
↑ heard

8.40 BP-ch heard trip JDAS RO 74 WRONG LAM BR1 CR1 BP

9.28 trips, trips ...

9 28 beams lost

10.48 In the middle of run 20989 beampipe chamber HV reduced to 1450 V.

10 58 beams lost
temperature alarm T = 20°C

16:00 DL8 defekt ersetzt Barton & Matsumura on shift. Gas check done.
N50 down Reloaded

16:38 beams lost Power Supply of Cryotron down → shut break

18:30 One of the Linear Sum for L.G. (cr 2-16, BG33) was replaced, because its output had been oscillating. (K.K.)

23 30 Beams back at last - but lost before we could take any data. All chambers Tripped.

28/5/85 00⁰⁰ Clarke a Chinn on shift.

00.10 PKR called, transmitter problem caused by bad klystron. They will try again. If transmitter fails, will require a klystron change,

" Gas check done

5.38 Run started. low beam currents.
DL8 (reported above & changed by Matsumura) now OK.
Run 20945 started, very low currents, PKR have problems - loose most of beam between 14-16 GeV, they await arrival of further experts and will decide then what to do, we must will continue running under these conditions.
JDAS Readout error 33 - Missing LAM b 4 c 6: ID Ring 2.

7.10 Experts in, stopped run, try for new filling.

7.54 Run 20996 started, expert seems to have solved the problem I ~ 4.6 mA.

7.58 Beams lost

8.00 Komamiya + Hughes
Gas checked ~~For O₂ Monitor, only A4 is connected.~~

9 10 Magnet → 200 A, computer control doesn't work

9 30 H. Rieseberg replaces S. Komamiya on shift for the next two hours

10 15 Magnet manually to 7500 A, injection

10 30 Mr. Delfs calls. He wants to make some changes in the IBM-link. Estimated time 1 to 2 hours. As the situation of PETRA is — bad, we agree. Transmitter problems

RUN	DATE	START	STOP	AT RUN START I+	I−	DEAD TIME (%)	TIME (sec)	RECORDS IN	RECORDS OUT	ALL ×10^6	T0 REJ ×10^6	T1 ACC SUM	T2 ACC SUM	T1 Bit 2 E>6GeV	T2 BIT 17 2T·E4·≥2TR	Processors ON/OFF N50	MIP	TOF	FAMP	<L>	Bhabha ∫Ldt	∫Ldt Exp. energy	IBM/Tape OUTPUT	At Run Start ID (μA)	TOF (V)	ONLINE REJ T2 %	NORD T1 & T2 %	Σ Bhabha	MH	E beam	Mag. Field	Remarks

28.5.85 cont'd

12⁰⁰ Beam at 21.800 – Luminosity
IBM link unavailable for another 30 mins   H-Delfs 3769 → we lost 4 multihadron events

YCLRTV updated. should now give stats of IBM dump job. HEF

12⁴⁰ IBM on-line up.
12⁵⁰ Beams lost
14⁰⁰ Disc copy taken, Now running on proper system disc

15⁰⁰ Starting run is not possible any more!
Data taking stops during the pedestal events run (every 2 events)
Reason on system Console – TOF AC 2099 no response. In fact all microprocessors had stopped. Reloaded them.
The TOF processors still gave no response so turned OFF for time being.

16.00 Kawagoe + Narosha
Reloaded TOF processors, testrun ok.
17.00 Gas Check done.
21.00 Beams, very asymmetric e⁻ 3.96 mA, e⁺ 2.41 mA
The chamber currents are remarkably low: VTXC 23 on meter.
W = 1450 V.

23.00 New filling e⁻ 5.7 e⁺ 5.01 VTXC ~ 50 on meter.
I had disassembled and assembled the TOF AC 99. And it worked in a testrun for ~1 hour. As soon as the data run started it stopped working again.

TOF-MIPROC Leave it off for the night. When the Nord has to be restarted, switch it off again. (F15, F9, 2, 0)

23.22 Increased VTXC voltage to 1475 V, current now ~59.
Stopped run for LG electronics repair (BG.)
23.41 LG repair didn't work, it affects histogram T1 input.
VTXC current meanwhile at 69. PKR is still trying to optimize lumi.
LG problem in histogram T1 is probably due to a noisy (sparking) PMT.

24.00 Barlow & Spitzer on shift. Gas Check done.
1⁰⁰ Fault in LG Camac crate power supply. Switch off to cool down (Traditional remedy)

1³⁰ Newfill. LG power supply still faulty.
Replace power unit module. Still faulty.
Try to remove fan unit ~~and~~ call LG expert
4⁰⁰ Succeed in removing fan unit, and drag LG expert from his bed.
But power supply still faulty.
4³⁰ Amazing new development. Power supply misbehaves only when actually taking data! OK when run not in progress.
5⁰⁰ Replacement power supply was only 3A capacity on 24V line. Put old one back (8A). Power supply now OK — but no data read in from this crate.

5³⁰ ADC processor replaced. Should now be all OK (but no beam).
7³⁰ Start datataking (at last!)

8:00 W. Bartel & D. Clarke on shift

8:04 VTXC had trip α1
8:06 " " " "
8:09 " " " " anode Voltage reduced to 1450V (W)
8:25 " " " "
8:28 " " " "
8:31 " " " "
8:40 " " "
8:55 " " "
9:03 " " "
9.15 " " " "
9.26 " " "
9.29 " " "
11:25 Petra cannot be filled because of Vacuum problems in DESY
15.00 VTXC voltage reduced to 2000 V. One quadrant taking high current, without beam.

15.20 Petra OK E⁺ 6.14 I⁻ 6.19 TOF rate off the scale!
15.48 Started run 21014 – JDAS READOUT ERROR 33 – Missing LAM B3 C3; Tagging ADC's
Run Terminated automatically.
Try again — as above
16.00. Hughes + Olsson.
JDAS Error 33 Missing Lam B3 C3 Tag ADCs 2280 Processor Broken
P.T.O.

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	T1 ACC SUM	T2 ACC SUM	T1 Bit2 E1,2>6GeV	T2 BIT 17 2T·E4·>2TR
186															
21007	29.5	4^09	4^08	JUNK — FAULTY LQ POWER SUPPLY — IGNORE.											
21008	"	7^34	8:30	5.74	5.02	11.7	2760	8002	4039	714	127	4290	5352	1408	21
21009	"	8.30	9.20	4.61	4.27	16.4	2751	8002	4209	715	117	4486	5001	1413	21
21010	"	09^21	10^15	4.05	3.76	14.9	2945	8002	4026	766	114	4516	4977	1351	25
21011	"	10^15	10:13	3.60	3.31	12.6	3427	8002	3749	892	113	4828	5346	1553	23
21012	"	11.14	12.20	3.20	2.90	11.5	3828	8002	3441	996	115	5000	5630	1549	23
21013	"	12.22	12.39	2.77	2.47	10.7	1010	2118	847	263	28	1375	1400	441	3
21014	"		junk	1 event to IBM											
21015	"			1 event " "											
21016	"	16:30	16:47	5.13	5.18	23.8	959	3011	1467	249	59	1427	2199	442	10
21017	"	18.36	19^24	5.22	6.08	18,4	2662	8002	3817	693	127	4017	5636	1136	27
21018	"	19^25	20^41	4,42	5,27	15,0	2750	8002	3840	715	107	4308	5584	1328	38
21019	"	20^41	20^49	3,36	4,62	12,1	2085	5465	2308	542	66	3052	3700	936	19
21020	30.5.	3^51	4^48	4.10	5.67	11.8	3406	8002	3653	886	104	4329	6395	1074	40
21021	"	4^49	5^00	2.60	3.94	10.3	631	1406	580	164	16	776	1674	195	3
21022	"	6^27	7^27	4.14	5.79	10.7	3559	8002	3634	926	100	4612	5768	1039	27
21023	"	7^27	7^46	3.20	4.65	10.1	1130	2321	1040	293	29	1404	1705	333	10
21024	"	8^33	9:26	5.17	5.00	12.6	3143	8002	3712	818	103	4379	5727	980	28
21025	"	9:26	10:15	4.57	4.24	15.7	2881	8002	3437	750	118	3827	5667	934	19
21026	"	10:15	11:20	3.95	3.74	10,8	3688	8002	3592	960	104	4997	5471	1195	269 24
21027	"	11:20	11:37	3.23	3.23	10.5	1585	1330	590	152	16	823	852	177	2
21028+	21029	Junk runs to test IBM Link													
21030	"	17:33	18:24	4.97	5.70	13.5	3062	8002	4257	798	107	4576	5402	996	29
21031	"	18:24	19:18	4.10	4.95	12.7	3185	8002	4154	829	105	4814	5113	1042	22
21032	"	19:17	20:18	3.50	4.30	12.0	3577	8001	3716	931	111	4801	5456	1074	23
21033	"	20:19	21:20	2.92	2.46	10.6	3612	7459	3298	840	100	4581	5145	996	23
21034	"	22:16	23:11	5.28	5.29	16.6	3239	8002	4099	843	140	4502	5602	1036	28
21035	"	23:11	0:09	4.37	4.31	11.3	3416	8002	3751	888	100	4711	5595	1092	23
21036	31.5.85	0:09	1:12	3.76	3.68	10.9	3723	8002	3463	968	106	4862	5618	1139	17
21037	"	1:12	1:34	3.36	3.25	9.8	1282	2587	1032	333	33	1568	1793	339	5
21038	"	2:43	3:37	6.05	6.34	14.2	2879	8002	4240	749	106	4408	5722	1085	27
21039	"	3:37	4:29	5.18	5.49	13.6	3049	8002	4040	794	108	4662	5655	1118	21
21040	"	4:29	5:24	4.54	4.84	11.8	3286	8002	3944	855	101	4691	5783	1108	32
21041	"	5:25	6:04	3.88	4.26	12.9	1922	4897	2475	500	64	2899	3617	725	24

N50	MIP	TOF	FAMP	<L> 10^30 cm^-2 s^-1	Bhabha ∫Ldt nb^-1	∫Ldt Exp. energy	IBM/Tape OUTPUT	At Run Start ID (μA)	At Run Start TOF (V)	Online Rej SUM MIPROC T2 %	Online Rej NORD SC T1 & T2 %	Σ Bhabha	MH	E Beam	Mag. Field −Gauss	Remarks
Processors ON/OFF																187
						4327.16										JUNK.
ON	ON	OFF	OFF	3.15	7.24	4334.40	IBM	1.3	1.5	42	52	82	4	218	-4835	
"	"	"	"	2.67	7.42	4341.82	"	0.8	0.8	48	51	84	3	"	-4835	
"	"	"	"	2.09	4.38	4346.15	"	0.6	0.7	48	53	44	0	"	-4835	
"	"	"	"	1.70	5.74	4351.89	"	0.7	0.6	50	56	65	0	"	-4835	
"	"	"	"	1.31	5.57	4357.46	"	0.7	0.6	52	59	63	2	"	-4838	
"	"	"	"	1.13	0.88	4358.34	"	0.5	0.5	52	62	10	0	"	-4852	
							IBM		1.							Run terminated
							"									" "
ON	ON	OFF	OFF	4.76	4.77	4363.11	IBM	2.2	1.5	32	53	54	1	"	-4843	Beams lost. No Tagg NDC in readout
"	"	"	"	4.57	9.98	4373.09	"	2.6	1.2	33	54	113	2	21802	-4844	Tagging in again!
"	"	"	"	3.99	7.28	4380.37	"	1.6	0.65	37	53	105	4	"	-4847	
"	"	"	"	2.51	3.45	4383.82	"	1.5	1.00	38	59	39	1	"	-4846	partial beam loss
"	"	ON	"	2.00	6.80	4390.62	"	1.4	1.2	46	55	77	2	"	-4841	
"	"	"	"	1.64	0.88	4391.50	"	1.0	1.0	45	60	10	0	"	-4840	beams lost
"	"	"	"	3.04	10.51	4401.01	"	1.5	0.8	44	56	119	2	"	-4841	
"	"	"	"	2.15	2.92	4403.93	"	0.8	0.44	50	57	33	0	"	-4841	beams lost
"	"	"	OFF	3.89	9.63	4413.56	IBM	1,25	0.8	40	55	109	3	21,800	-4842	
"	"	"	"	3.37	8.04	4421.60	"	2.0	0.6	30	58	91	3	"	-4841	
"	"	"	"	2.6	9.36	4431.96	"	0,9	0.45	48	56	106	3	"	-4844	Hagemann permanently topples VTCH over. Slightly irregular run
"	"	"	"	2.39	7.50	4435.46	"	0.8	0.33	46	57	17	1	"	-4846	Beams dumped. PETRA wants separ.
"	"	"	"	4.85	13.43	4448.89	"	0.6	0.6	43	48	152	5	21800	-4846	
"	"	"	"	3.52	10.16	4459.05	"	0.5	0.5	44	50	118	1	"	"	VTX 1000V
"	"	"	"	2.85	6.89	4465.94	"	0.5	0.4	47	55	78	4	"	-4847	
"	"	"	"	2.25	6.80	4472.74	"	0.8	0.4	50	57	77	2	"	"	Beams dumped.
"	"	"	"	4.31	11.93	4484.67	"	1.3	1.0	43	50	135	6	"	"	
"	"	"	"	3.24	12.10	4496.77	"	11	0.5	45	54	137	4	21802	-4844	VTCH at 1000 V
"	"	"	"	1.37	5.48	4502.25	"	0.85	0.5	48	58	62	4	21.800	-4844	↓
"	"	"	"	1.23	2.12	4504.37	"	0.6	0.4	48	62	24	0	"	-4844	Beams dumped
"	"	"	"	4.99	12.81	4517.18	"	1.3	1.5	41	48	145	6	"	-4841	
"	"	"	"	3.69	10.07	4527.25	"	1,0	0.75	45	51	114	0	"	-4840	
"	"	"	"	2.95	8.75	4536.00	"	0.85	0.65	46	52	99	1	"	-4840	
"	"	"	"	2.33	3.36	4539.36	"	0.8	0.8	49	51	38	0	21.802	-4841	Beams dumped

Continued in LOG BOOK XVI

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 $E_{tot} \geq 6$ GeV	T_2 BIT 17 2T · $E_t \cdot \geq 2$TR

today early morning !!

(Tagging)

The Lecroy Processor was found broken. We have no spare, since our last spare was used in the Tokyo Lead glass a couple of days ago. We have borrowed a unit from ARGUS (their last spare!) and we have to give it back when they need it. In this case we have to take data without Tagging. ADC, readout pattern 7775 7B. Our 2 broken 2280 processors will be given in repair to Lecroy here in Hamburg. J.O. only R 21016

18^{35} R 21017 on. YSTY message on missing wiresides in VTX chamber: consequence of reduced voltage!
18^{48} Soft trip Tel + VTX
19^{11} Missing LAM B4 C6
19^{40} " " " "
19^{53} JDAS 45 MP16 and incompl Y=1
20^{04} Missing LAM B4 C6
20^{06} JDAS 45 same as above
20^{07} B4 C6 Missing LAM again 20^{32}
20^{40} Soft trip Tel + VTX Partial beam loss, call for new fill
22 Still no beam. Loaded TOF processors. They work fine in test runs

30.5.85

0^{00} Kawagoe & Magnussen on shift
0^{05} Last gas check was done at 9^{00} PM (21^{00}); so we wait until daylight
3^{45} New fill ready
4^{35} Gas check done
8^{00} Hellenbrand & Knellbil on Shift
8^{33} Beams up again. Conditions fine.
8^{55} JDAS RE. ERR 45 MP-16 - Anal. incomplete
9:30 RUN 21024 Increase of ID current from 1.2 to 2 μA, because PKR optimized LUMI
10:00 They found a way of reducing our background. ID current back to < 1 μA, TOF rate ca 0.45 V, DT 10%
10:20 Red warning Illegal YETC data!
10:40 Miss LAM Br 4 Cr. 6 2*
JDAS 46 MP-16 out of sequ. YY=1

10.35 // ID anode current signal sent to PKR, VTXC cable disconnected // J.H.

10.50 VTC soft trip (Hagemann is playing downstairs)
11.10 JDAS E. 74 Wrong LAM br. 1 cr. 1 Beamp ch. 2*
11.29 Missing LAM b. 2 crate 4 TOF 2

Processors ON/OFF N50	MIP	TOF	FAMP	<L> 10^{30} cm^{-2}sec^{-1}	Bhabha ∫Ldt nb^{-1}	∫Ldt Exp. energy	IBM Tape OUTPUT	At Run Start ID (μA)	At Run Start TOF (V)	ONLINE REJ SUMS MIPROC T_2 %	ONLINE REJ NORD SC T_1 & T_2 %	Σ Bhabha	MH	E_{beam}	Mag. Field	Remarks

On monday morning 3.6.84 TASSO wants to have access for about 8^{00}
R. Feist

11.30 PETRA wants to dump the beams and do some repair work. "short break" following

16^{00} Barlow v. Ramcke on shift

17^{20} Beams back. Start run.
Vertex chamber HV reset to 1475 Volts (was 1000 Volts). Current now ≈ 67 μA, histograms seem OK.
18^{00} Vertex chamber current slowly and steadily rising. Now 80 μA.
18^{15} Gas check done.
Muon crate 8 is missing fairly frequently and has to be reset.
Vertex chamber soft trip. Voltage reset to 1400 V.
20^{12} JDAS READOUT ERROR 45 MP-16 analy. incomplete
20^{17} " 33 Missing Lam branch 4 create 6
22^{52} Vertex chamber voltage set on 1000 V ← don't change it! R. Ramcke

31.5.85

0^{00} D. Haidt and H. Rieseberg on shift
0^{20} Gas check done
0^{40} Muon crates missing 6, 8, 8. Reset ok.
1^{20} Run down for refill
2^{35} New fill ready. High TOF-rate, unstable
2^{43} Start of Run 21038. High luminosity
5^{03} Beam a little unstable
5^{10} Compressor 3 makes a lot of noise and goes to Störung. It restarts automatically after a few seconds, makes more and more noise and ends with Störung — and so on. Temperature is ok.
6^{03} Stop for refilling PKR has tried to keep luminosity high, then beam became unstable. At end $L = 1.9 \times 10^{30}$ still.
6^{50} New filling ready
7^{02} Run 21043 started, see Book XVI
This fill is rather poor: $L = 3 \times 10^{30}$, SL = $18 \cdot 10^{28}$

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 Bit2 $E_{tot} \geq 6$GeV	T_2 BIT 17 $2T \cdot E_4 \cdot \rightarrow 2TR$

Processors ON/OFF N50	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 NORD SC T_1 & T_2 %	Σ_{Bhabha}	MH	E_{beam}	Mag. Field	Remarks

midnight - midnight : Daily integrated luminosity